The Builder.

VOL. LXXXIX.—No. 3263. AUGUST 19, 1905.

ILLUSTRATIONS.

Chancel Screen, Bristol Cathedral.....The Late J. L. Pearson, R.A., Architect.
Public Library, Malvern.....Mr. H. A. Crouch, Architect.
Free Library, Nelson.....Messrs. J. R. Poyser and W. B. Savidge, Joint Architects.
Organ Case and Choir Stalls, Headingley Hill Church.....The Late F. W. Bedford, Architect.
Brass of Sir Simon de Felbrigg and Wife.....From a Rubbing by Mr. E. Tennyson d'E. Jesse.

Illustrations in Text.

Hemel Hempstead Church..... Page 200
West Doorway, Hemel Hempstead Church ..... Page 201
Hemel Hempstead Church. Interior ..... Page 202
Details of Old Beaupré, Glamorganshire ..... Page 206
The Red Tower, York. From a Sketch by Mr. W. Eaton, A.R.I.B.A. ..... Page 207
Malvern Free Library. Ground Plan ..... Page 210
Illustrations to Student's Column ..... Page 211

CONTENTS.

	PAGE
The Church of Hemel Hempstead	199
Notes	202
A Visit to the Museum of Sanitary Appliances, Hornsey	204
St. Mark's, Venice	205
Old Beaupré, Glamorgan	206
The Professional and the Amateur	206
The Red Tower, York	207
Architectural Societies	208
Books—G. B. Brown's "William Hogarth"; J. W. Brown's "Italian Architecture"; "Painters' Oils, Colours, and Varnishes"; H. Arnold's "The Popular Handbook on House-Painting, Decorating, Varnishing, Graining, etc."; J. E. Morris's "Lynton, Lynmouth, and the Lorna Doone Country"; J. Horner's "Tools for Engineers and Woodworkers: Including Modern Instruments of Measurement"; G. D. Hiscox's "Mechanical Appliances, Mechanical Movements, and Novelties of Construction: An Encyclopædia of Mechanical Movements and Mechanical Appliances"; M. Merriman's	
Books (*contd.*):— "Elements of Mechanics: Forty Lessons for Beginners in Engineering"; H. Griffiths' "The Plenum or Propulsion System of Heating and Ventilation"; W. F. Goodrich's "Small Destructors for Institutional and Trade Waste"; W. A. Tookey's "Gas Producers for Power Purposes"; A. Taylor's "The Sanitary Inspector's Handbook"; K. Hedges' "Modern Lightning Conductors"; B. Fletcher's "Arbitrations: A Text-book"; W. Robertson and C. Porter's "Sanitary Law and Practice: a Handbook for Students"	208
Illustrations:—	
Chancel Screen, Bristol Cathedral	210
Malvern Free Library	210
Nelson Free Library	210
Organ Case, Headingley Hill Congregational Church, Leeds	210
Brass of Sir Simon de Felbrigg and his Wife	210
Competition	211
Books Received	211
Trade Catalogues	211
The Student's Column	211
Obituary	212
General Building News	213
Appointments	213
Sanitary and Engineering News	213
Foreign	213
Miscellaneous	214
Legal:—	
Roberts and Another *v.* Stythe	215
Southend Building Dispute	215
Case under the Public Health Act	215
Action against Landlord for Defective Flooring	215
Hampstead Paving Apportionment Dispute	216
Limitation of Powers of a District Council	216
Patents	216
Some Recent Sales	217
Meetings	217
Prices Current	217
Tenders	219

The Church of Hemel Hempstead.

THE interesting and picturesque old market town and borough of Hemel Hempstead possesses a church of considerable stateliness and antiquity. It has also had the good fortune to emerge comparatively scatheless from a long series of XIXth century restorations.

The church of St. Mary consists of chancel with northern annexe and vestries, clearstoried nave of six bays with north and south aisles, north and south transepts, north and south porches, and central tower and spire.

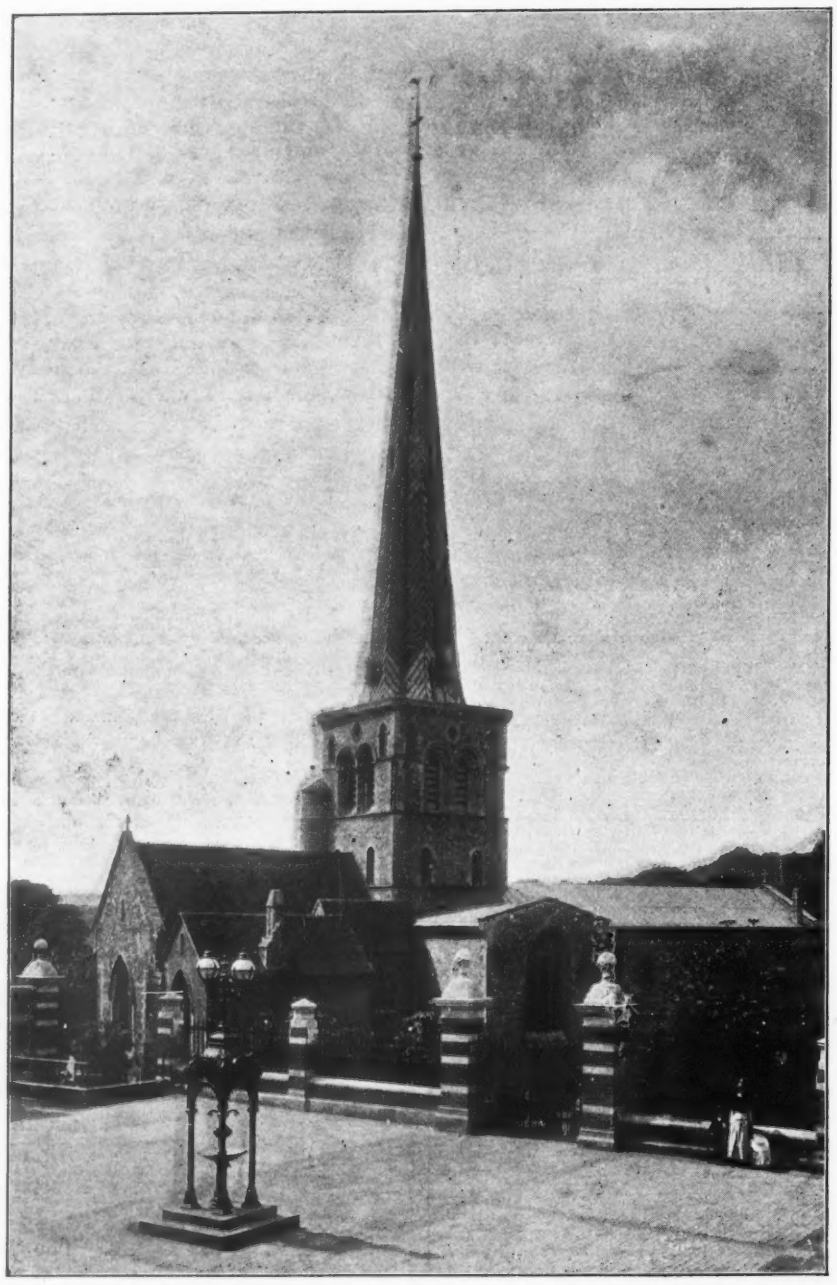
Hemel Hempstead was a place of some importance in pre-Norman days, the manor or manors being divided between the Saxon kings and the Abbey of St. Albans. The Abbey retained its section until the time of its dissolution. William the Conqueror bestowed the royal moiety, together with the manor of Great Berkhampstead, on his half-brother, Robert Earl Moreton, who was succeeded by his son William as Earl of Cornwall. There can be no doubt whatever that Hemel Hempstead was a place of sufficient importance to possess a church in the later Saxon days, which would stand on the royal desmesne. The monks of St. Albans would, with almost equal certainty, have their own grange chapel. But of ecclesiastical buildings of that period there are now no traces. The church on the old royal manor was rebuilt on a fine and imposing scale, after the later Norman style, about the middle of the XIIth century.

It is recorded that in 1140 the forfeited earldom of Cornwall was bestowed by King Stephen on Reginald de Dunstanville, a natural son of Henry I., to whom may probably be attributed the rebuilding of the church of Hemel Hempstead on a cruciform scale. The manor (apart from the possessions of the Abbey of St. Albans) was a valuable one, and the worth of the rectory considerably above the average of churches.

Towards the beginning of the reign of Edward I., Edmund Earl of Cornwall, the son of Richard King of the Normans, founded the College of Bons Hommes at Ashridge, Bucks, bestowing on it his manor of Hemel Hempstead, but excepting the advowson of the rectory. However, in 1290, when increasing the endowments of the rector and brethren of this college, he added the gift of the rectory with the advowson of the vicarage. From that date until the dissolution of the religious houses, in the reign of Henry VIII., the College of Ashridge held the appropriated rectory and presented the vicars. The Taxation of Pope Nicholas was drawn up the year after the church had become their property. The returns show that the College of Ashridge drew over 50*l.* a year from the manor and lands, whilst the rectory was worth to them 33*l.* 6s. 8d. a year. The vicar at that time only received an income of 5*l.*

The valuation of Henry VIII., drawn up about two and a half centuries later, shows that the college then drew an income from the manor of 137*l.* 10s. 2½d., and from the rectory of 42*l.* 3s., whilst the annual value of the vicarage had increased to 16*l.* 1s. 10d.

In its main features the church happily retains very much of the work of the XIIth century. The nave is separated from the aisles by massive Norman arcades, each of six arches. The pillars and pilasters are circular, with capitals, slightly varying, but of the usual cushion style. The hood-mouldings of the four centre arches on each side are ornamented with a plain billet pattern. The westernmost arch of the south arcade and the easternmost of the north arcade are more richly ornamented with a double dovetail effective moulding, after a pattern that appears in several parts of the cathedral church of Ely. The two other end arches have a two-fold zigzag moulding below the billet pattern. At the west end of the nave there is a horizontal string course of this billet moulding running along the wall and rising to surmount the large western doorway. Above the arcades are six large Norman clearstory windows, with slender jamb shafts at the edge of the splays, continued in a plain round moulding. Over the second clearstory window from the east on the south side is the head of a wider arch, which might readily puzzle any architectural student. It is in reality the remains of a much wider and larger window of later style inserted here to throw extra light on the XVth century Rood. The proportions of the other Norman clearstory windows were somewhat



Hemel Hempstead Church.

unfortunately renewed in this place during a restoration of 1885. The head of this debased arch was, however, left in position; possibly the restorers had some sense of humour, and left it in the hope that it might prove a pitfall to future antiquaries. From such a blunder we were happily saved by the courteous information of Mr. J. Lawrence, who has been the worthy parish clerk of Hemel Hempstead for a period of forty years.

The great central tower is supported by four lofty horseshoe arches. The one facing the nave is richly moulded, though quite plain on its eastern face. The tower rises in two stages above the roofs of the body of the church, and is well proportioned. The lower stage is lighted by two plain circular-headed windows on each face. The bell-chamber stage is much enriched, having on each side a large pair of semi-circular-headed lights divided by shafts and surrounded with well-defined mouldings. Above each pair is a small circular light with zigzag mouldings; whilst on each side of it is a blank window or recess. Beneath the plain parapet is a bold corbel table.

Both transepts clearly retain their original Norman proportions, and are unbuttressed. The south transept has a good-sized Norman window in the west wall, with zigzag mouldings above it. The corresponding window of the north transept has been built up. At the east and west angles of both transepts are corbel heads just below the spring of the roof. In the interior of the south transept may be noticed a string-course of billet moulding about 12 ft. from the floor level.

The finest external remains of the XIIth century church are at the west end of the nave. The large western entrance is a singularly good example of late Norman ornament. The head is enriched with five orders of mouldings, including the billeted hood-mould, and there are three slender jamb shafts on each side. The nature of the ornament can be better appreciated from the photographic illustration than from any mere verbal description. A good deal of the work of this doorway has been renewed during recent years; but that it has been executed with much faithful care is obvious by a comparison with the good engraving executed by Edward Blore in 1823, which appears as one of the plates in Vol. I. of Clutterbuck's "Hertfordshire." Mr. Clutterbuck says that the doorway in question "exhibits the richest specimen of Saxon (?) architecture to be met with in this country."

The most interesting and exceptional work of this period yet remains to be described. The two bays of the chancel still retain their well-built roof of stone groining. This vaulting springs from semi-circular pilasters rising from the ground, with well-defined bases and diversely-enriched capitals. In the centre is a bold transverse rib, and from each side of this, crossing over to the east and west angles, are the diagonal ribs. There are very few parish churches that retain so fine an example of Norman ribbed groining. The roofing of this chancel may be compared with that of the chancel of Crondall, Hants, though the latter instance is nearer the end of the XIIth century. There is a highly exceptional, if not unique, feature attached to this chancel on the north side. From the east end of the north aisle of the nave is a small chamber or passage having an internal measurement of 13 ft. in length by 6 ft. 4 in. in width. It is vaulted with stone-ribbed groining of two bays, almost precisely like the chancel roof on a very small scale, and is, of course, of like age. A variety of vestry accommodation has from time to time been provided on this side of the chancel, of both pre-Reformation and modern date, so that it is difficult to say for certain whether this narrow chamber was complete in itself according to the original Norman plan, or whether it led to some more-extended building. On the whole it seems most probable that it was designed simply to serve as a sacristy. There would have been no extensive or high building on this side the chancel in the XIIth century, as there is still remaining in the north chancel wall a large, widely-splayed Norman window, together with a shallow buttress and the remains of a double string-course of the like date. In the south wall of this vaulted passage are traces of a built-up low arch into the chancel; but its obtuse-angled head shows it to be of later date, and it was probably constructed to hold a tomb or effigy. High up in the north wall of the chancel, near the east end, is a wide, circular-headed opening, calculated to deceive and puzzle the unwary. It is over the vaulted passage, and communicates with what is now known as the upper vestry. This was in reality constructed in the second half of last century to serve as an organ chamber, and the wide opening was made for the due emission of the sound; but at a later date a larger organ was placed in the north transept.

The photographic illustration shows the upper part of a square-bowled font on the south side of the nave. It has now been moved to a more convenient place in the south aisle immediately to the west of the chief entrance. This font seems to be undoubtedly of XIIth century date, though much recut throughout, and the top covered with poorly-done Scriptural scenes and modern lettering. The substantial circular shaft is diagonally channelled, and the wide base is most richly carved. The "restoration," or rather the unhappy modernising, of this font was probably accomplished in 1846.

The walling of the chancel and the

transepts and of much of the nave retains most of its Norman characteristics, and consists of flints, dressed and undressed, with stone facings; the two outer lines of enriched stone string-courses, originally ornamented throughout with the billet moulding, can be readily noticed on the three sides of the chancel and on most of the south transept. In the walling of the nave and elsewhere pieces of roof tiling have been often inserted, whilst the edges of two or three thicker tiles, apparently Roman, may also be noticed.

It is not surprising, when so good and well built a church was erected—*circa* 1150—to find that no repairs or additions seem to have been desired or required in the next century. At all events, the fabric shows no traces of any interference with its plan during the Early English period or the beginning of the somewhat vague period usually styled Decorated.

The first symptom of any change from the Norman occurs in the time of Edward III., probably in the second quarter of the XIVth century. This change manifested itself chiefly in the chancel. At that period two large three-light pointed windows were inserted in the south wall of the Norman chancel. The east gable of the chancel was at the same time rebuilt, a new three-light east window inserted, the pitch of the roof slightly raised, and a small light with a trefoil bead placed in the gable over the east window. The tracery of this window was renewed in a later style, but the two south windows have obvious XIVth century tracery. A trefoil-headed, ogee-shaped piscina niche in the south wall of the chancel is of this period, and so, too, is another like piscina niche in the south wall of the south transept. This new work in the chancel, probably undertaken mainly for the greater display of the growing art of glass staining, would almost certainly be the work of the master and brethren of Ashridge as rectors. Gilbert de Bowelles (or Bowles) became master in 1346; it is by no means improbable that he contemplated a more thorough alteration of the chancel, and perhaps of the church at large, but was prevented by the catastrophe of the Black Death of 1348-9.

The next alteration in the church was apparently about the beginning of the XVth century, when the walls of the nave aisles were either reconstructed throughout or, at all events, pierced with new and larger windows and a porch added on each side. These aisle windows are similar on each side. There are three to the east of the porch and two to the west. They are all two-light, pointed windows with tracery early in the Perpendicular period. Those on the north side are comparatively untouched, but three of those on the south side have had their tracery renewed.

Towards the close of the XVth century, or in the beginning of the XVIth, there seems to have been further work at the church. The large windows of the transepts and the west window of the nave are of late Perpendicular style. At the same period a somewhat plain, nearly flat roof was given to the nave. The east bay of the nave roof, over the Rood, was, however, specially panelled, and still bears some remains of painting. The transept roofs are sometimes described as "very fine examples of XIVth century roofs." This is quite a mistake. The south transept roof includes some carving that formed part of a Decorated roof; but this roof had been cut down into a later form at the time when the present roof was placed on the nave, and even when perfect was in no sense remarkable.

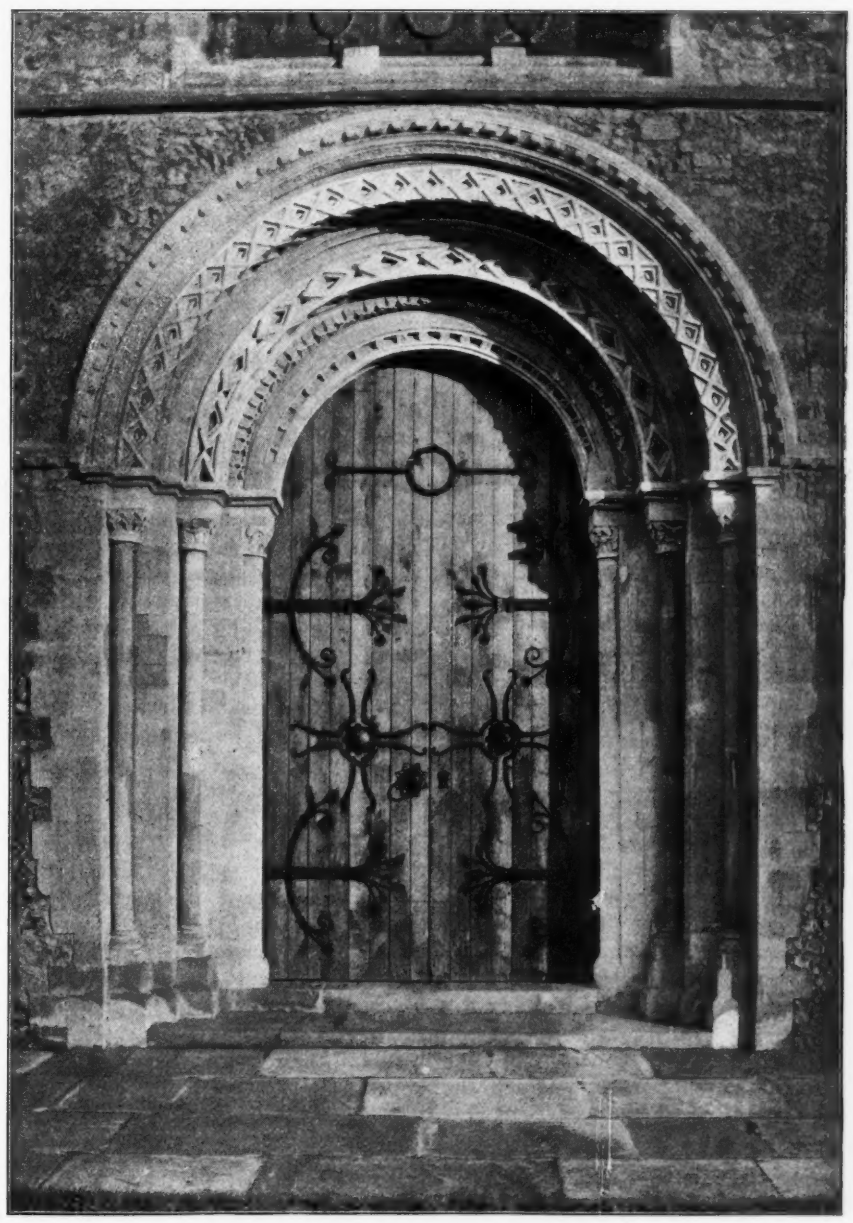
There is, however, one striking feature of the church, which is probably of early XIVth century date, and notable for many miles round, namely, the lofty octagonal spire of lead-covered timber. It may be compared with the sun-warped eccentric spire of Chesterfield Church, or with the fine example at Hadleigh, Suffolk; but of all the lead-covered spires in England that of Hemel Hempstead certainly presents the most graceful outline and is probably the highest. On the east face of the spire, about 12 ft. from the summit, is a square opening, where the diagonal arrangement of the lead ceases. This is covered by a sheet of lead stamped with eight roundles in two lines. A like opening in the Chesterfield spire is called the "crow-hole," and was designed and used for purposes of outside haulage of material when repairs were requisite. In a line with this closed "crow-hole" are a series of tiny dormered openings, on each of the other seven faces, for purposes of ventilation.

There seems to be a considerable dearth of early memorials in this church, as Hemel Hempstead was undoubtedly a town of some little importance in mediæval days; but this probably arose from both the chief manors being in conventual hands. There is, however, one early monument of considerable interest and value. Against the west wall of the south aisle is a large slab, removed some time ago from the top of an altar tomb, bearing two good brass effigies of a squire and his wife and their arms, with a partially-ventilated inscription plate. The Norman-French inscription read when perfect (it is engraved in Clutterbuck's "Hertfordshire"):—

"Robard Albyn gist icy Et Mergrete sa femme
Oveke by deu de lez alm' eyt mercy. Amen."

In English this would run:—"Robert Albyn lies here and Margaret his wife with him, may God have mercy on their souls. Amen."

The squire is represented in plate armour with a conical helmet and gorget of chain mail; he wears a sword on his left hip and a dagger on his right, and his feet rest on a lion. The lady wears a girded dress with close-buttoned sleeves, and a mantle corded across the breast; the head rests on a tasselled cushion and the feet on a dog with a collar of bells. Above the squire is a shield bearing three lapwings



West Doorway, Hemel Hempstead Church.

Hemel Hempstead Church. Interior.

on a bend ; above the wife is an impaled coat quarterly of four, a crescent for difference, with the impalement now blank. Various references to Robert Albyn have been found in the records of Edward III. His wife Margaret (Wothen) was a native of Hemel Hempstead. She outlived her husband, and, dying in 1390, directed that her body should be buried in this church near her husband, and left money for a monument to be erected over them.

There used to be an inscription in the chancel to the memory of Thomas Waterhouse, the last master of the house of Bons Hommes at Ashridge, who was buried here in 1557 ; but it has long ago disappeared.

The following remarkable inscription is on a stone in the vaulted chamber on the north of the chancel :—

"Heere lyeth interred the body of Thomas Deacon, the sonne of Thomas Deacon and Martha his wife, of Courerhall, batchelor of artes and student in physick, who by his extraordinary spare body in respect of breadth being long sick of a consumption and of his as extraordinary height, being in proportion to the length of this stone, might shew the desire he had to heaven and so departed Sept. 28 An. Do. 16—."

Clutterbuck, writing in 1815, gives the measurement of the stone bearing this inscription as 6 ft. by 2 ft., which does not appear to be anything exceptional. When it was removed from the chancel in 1846 it was cut down to 3 ft., so that the inscription now makes complete nonsense.

In the churchyard, on the south side of the nave, is a stone coffin ; it has a hollow for the head and tapers considerably to the feet. This was found beneath an altar tomb in the north transept, which was swept away during the somewhat reckless changes of 1846.

Within the altar rails stand two well-carved oak coffin stools of Jacobean date ; they do not appear to be now used for their original purpose. The present altar rails are of the usual modern style—brass and cast iron—but acting as a fence to the font in its present position by the south door is a piece of handsome carved railing with twisted baluster shafts, which formed, we presume, part of the good discarded altar rails ; they seem to be of late XVIIth century date.

In the modern vestry is a fair example of a late Jacobean altar table. It was disused about 1860, when Dr. Richard Temple West, for so many years vicar of St. Mary Magdalen's, Paddington, was curate of Hemel Hempstead. He gave to the church a handsome panelled altar-table of cedar wood to take the place of the one of Jacobean date.

In the upper vestry is a fine old iron-bound parish chest, having two ring-handles at each end; it is probably of early XIVth century date.

Considerable structural and internal repairs were done to this church, as has been already mentioned, in 1846. A general restoration of the nave and tower was undertaken in 1862-3, at a considerable cost, under the direction of the late Mr. Christian. In 1879 the same architect proceeded with a restoration of the chancel ; the date appears on the heads of the water-shoots. The transept roofs were opened out under like direction in 1880, and the nave roof unceiled and restored in 1885. The groined roof and walls of the chancel were recoloured, with fairly good effect, in 1888, by Mr. Bodley, F.S.A., traces of the old designs being followed as much as possible. A striking picture of the Annunciation has been painted on the wall at the west end of the nave over the archway into the tower, as a memorial to the Misses Hamilton, of Marlowes. New vestries were built on the north side of the chancel in 1897. The last improvement in this well-cared-for church is the complete restoration and repaving of the two porches of the nave, in 1901, by the Misses Varney ; the north porch, which is shallower than that on the south, is now happily again put to its proper use, after having long served as a receptacle for ladders and brooms and less sightly objects.

Looking back at this interesting fabric when leaving the town, the grace of the spire and the peculiarly winning colour of the dulled shimmer of the lead-covered spire, as it rose amid the early-budding foliage of a bright spring afternoon, made a lasting impression ; it brought to mind the words of Hertfordshire's first historian, Sir Henry Chauncy, who wrote, in 1700, of Hemel Hempstead Church that it had "a very fair and tall spire covered with lead, which is a great Ornament to the Town."

NOTES.

The Unemployed Bill.

It is unnecessary to do more than chronicle shortly the passing into law of the Bill to aid unemployed workmen. It has been passed through Parliament in a manner which is shocking to serious observers. It includes a great local change, namely, the giving of aid by public bodies to men who are unemployed, such aid being outside the ordinary poor-law system. It is a one-sided statute, because it takes account only of the unemployed manual labourer, and not of the man who is a clerk or a typewriter. It is true that the person who is to receive relief is to be entitled only because he has not lost his employment through a fault. But who can investigate the case of every applicant, and trace his life's history, as is necessary if one would ascertain if his want of employment arises from pure misfortune? The

misgivings of the Government as to the effect of the Act are shown by the fact that its operation is limited to three years, and that the bodies to distribute relief cannot get the money from the rates, but must depend on private subscriptions and donations. In other words, the Act recognises that relief should be given under certain circumstances, but does not provide the means of giving it. The change obviously cannot continue in its restricted form; it must be either enlarged or ended in three years' time.

Standard Fire-Resisting Buildings.

THE new rules of the Fire Offices' Committee, which have recently been issued, include provisions for buildings of reinforced concrete or "ferro-concrete." The provisions are not unreasonable, and will probably lead to the more general adoption of this method of construction in Great Britain. The metal rods or bars must be spaced *not less* than 12 in. apart, and must be embedded in concrete, "so that no part of any rod or bar shall be nearer the face of the concrete than double the diameter; such thickness of concrete must be in no case less than 1 in., but need not be more than 2 in." This is not very clearly expressed, but, doubtless, what is meant by "such thickness of concrete" is the thickness of the concrete outside the bar or rod; it is not, however, obvious what is the "diameter" of a bar oblong in cross-section. Floors and roofs must not be less than 5 in. and 3 in. thick respectively, external walls not less than 6 in., and party walls not less than 13 in. thick in any part. The concrete must be of sand and gravel, or other suitable aggregate, that will pass through a ¾-in. mesh, and good Portland cement, in the proportion of 6 cwt. of cement to each cubic yard of concrete. Other rules refer to flues, enclosures for hoists and stairs, etc. We may add that the rules for ferro-concrete construction must be read in connexion with the older rules for buildings of ordinary fire-resisting type, as some of these apply in both cases. Buildings which conform to the Associated Fire Offices' specifications are insured against fire at lower rates than other buildings, and the fact that ferro-concrete buildings are now accepted by the fire offices at these reduced rates is distinctly favourable to this modern type of construction.

Buildings in Advance of Building Line.

THE case of Dowsett *v.* Ramuz raised an interesting question. The plaintiff was the owner of a house at Southend-on-Sea, and he sought to obtain an injunction preventing the defendant, the adjoining owner, from bringing his house forward of a certain building line. The land upon which the houses stood had been sold, subject to a covenant that no buildings should be erected in advance of a certain building line 35 ft. from the road. The defendant's predecessor, in title, had built a house which stood 35 ft. 6 in. from the road, but with bays to the windows only 32 ft. 5 in. from the road, and the plaintiff has subsequently erected his house with a similar frontage. The defendant now proposed to convert the original house, which he had since purchased, into shops, which would bring the whole building forward to 32 ft. 4½ in. from the road, and the principal defence to this action was that the plaintiff himself, having broken the covenant by building the bay windows of his house forward of the building line, was no longer entitled to enforce it as against the defendant. The effect of the judgment delivered by the Court is that, had the plaintiff been trying to compel the defendant merely to set back the bay windows, he could not have succeeded, as he was in *pari delicto*, but the breach now complained of was a more serious matter, going beyond the breach committed by the plaintiff (which, having regard to what had been done in other houses adjoining, was a trivial matter), and the plaintiff was entitled, therefore, to restrain it by injunction.

Householders and New Streets.

THE case of Elsdon *v.* Mayor, etc., of Hampstead, raised an important question as to liability of house-owners to contribute to the expenses of paving and making up new streets. The plaintiff was the owner of certain houses abutting on the east side of a new street called Gondar-gardens. Opposite to these houses was land belonging to certain trustees, upon which houses had been erected. These houses fronted on another road running parallel to Gondar-gardens, called Sarre-road, but they had gardens running down to the west side of Gondar-gardens, from which they were separated by a fence. The defendants, acting under the Metropolis Local Management Acts of 1855 and 1862, resolved to pave Gondar-gardens, and apportioned the expenses upon the owners of the houses fronting the portion to be paved, including the houses facing Sarre-road. Subsequently the defendants rescinded this apportionment, and made another, which left out the owners of the houses in Sarre-road. As this increased the burden placed upon the owners of houses in Gondar-gardens, of which the plaintiff was one, the plaintiff in this action sought to set aside this last apportionment. It appeared that the reason that the defendants had rescinded the original apportionment and assessment was that they thought that the fence which separated the gardens of the houses in Sarre-road from Gondar-gardens was on a strip of land in other ownership, and that, therefore, the houses did not abut on Gondar-gardens at all. On the question of fact the Court held that there was no intervening strip of land in other ownership, and that if the houses in Sarre-road did not, within the words of Section 105 of the Act of 1855, "form the new street," yet within Section 77 of the Act of 1862 they did "bound" or "abut" upon it, and, therefore, the owners were liable to bear some portion of the expenses. The really important point in this case, however, appears to have been the contention set up by the local authority that, if there was difficulty in ascertaining the owners who were liable, the expenses might practically be apportioned on the rest who were known. It is to be observed that the Court emphatically negatived this proposition, and held that the owners liable must be included in the apportionment, and held the last apportionment to be illegal and invalid. The position of house owners, with the heavy and annually increasing liabilities attached to them, is often not an enviable one, but if the local authorities could pick and choose who should be included and who excluded in such an apportionment of expenses, their lot would be little less than pitiable.

House Property and Street Widening.

THE widening of Piccadilly has given rise to an interesting decision under the Act of Parliament known as Michael Angelo Taylor's Act (57 Geo. III., c. xxix.) under which the local authorities have powers to purchase houses, lands, etc., and lay the sites thereof, "or so much thereof as they shall think proper" into the streets. In the case in question, Pescod *v.* Mayor, etc., of the City of Westminster, the plaintiff was the lessee for a term of about two and a half years unexpired of the basement, ground floor, and entresol of a house in Piccadilly. The defendants, under the above Act, claimed to take the whole house for the purpose of widening Piccadilly, but the plaintiff applied for an injunction restraining them from proceeding under their notice to treat on the ground that part of the house—that is to say, a strip 22 ft. 6 in. back from the Piccadilly front—was alone necessary for the street widening, and that he could not be compelled to sell the whole of his interest. It may be pointed out that it has been decided in the case of Gordon *v.* Vestry of St. Mary Abbott's, Kensington, that under this Act the owner has not the power to compel the local authority to take the whole, as would be the case under the Lands Clauses Consolidation Act, 1845. The Court held that the plaintiff had no right under the statute to restrain the defendants from taking more of the premises than it was intended to dedicate to the public, and (applying the test laid down in former cases) found on the facts of this case that the portion of the premises actually required was so connected with the whole building that it could not be removed without destroying the identity of the house as a house, and that the defendants were acting *bonâ fide* in claiming the whole. The Court commented on the difficulties that would result were the plaintiff's claim well founded, especially where the premises were leased, as in the present case, to different lessees in flats, some of whom might take opposite views, but it does not appear that this difficulty would in itself suffice to enable the local authority to claim the whole, and such a case may yet have to be considered in the Courts, the *ratio decidendi* in this case being that above stated, that this house as a house would for practical purposes cease to exist after the portion required had been removed.

Concrete-Steel in India.

A SATISFACTORY indication of progress is given by the adoption of reinforced concrete in connexion with the construction of culverts and bridges in India. The flooring of the culverts and bridges on the Manupatti-Chinnar-road was erected over road carriers consisting of two rolled steel beams spaced 7 ft. apart, the concrete slab overhanging the supporting girder 2 ft. at each side. As the

upper surface of the cantilever ends, as well as the lower surface of the central portion, are exposed to tension, suitable reinforcement is provided near the top and bottom of the slab, in the form of ½-in. diameter mild steel-bars crossed by ¼-in. diameter bars, each series spaced at 3-in. centres. A good feature was the spreading of a ½-in. layer of 1 to 2 cement mortar over the centring, so as to form a smooth and strong surface for the bottom of the slab. The remainder of the concrete was mixed in the proportions of 1 part cement, 2 parts sand, and 5 parts broken stone. Some slabs used for replacing wood platforms on the Ootacamund Ghaut-road were moulded at a station some distance away, so that they could be placed in position with a minimum interruption of traffic. This method of procedure is clearly advisable for alterations to culverts on existing roads. Another instance of concrete-steel construction is afforded by the Pálár bridge with four spans of 66 ft., lately floored with reinforced concrete jack arches of 5 ft. 6 in. span. The works to which we refer were executed under the direction of Major W. M. Ellis, R.E., of the Public Works Department. It would be pleasant to hear of more enterprise in the same direction at home.

Heat in the New York Subway.

BEFORE the Rapid Transit Subway of New York was opened the general expectation was that the atmosphere would be cooler in summer and warmer in winter than the outside air. So far as concerns the summer temperature, the designers evidently omitted to take into account the heat developed by electric motors to be used for traction purposes. From recent thermometric observations it appears that the temperature is about 6 deg. F. higher in the subway than in the street above, and if the ventilation were less efficient than at present, the excess of temperature would be considerably greater. By calculating the quantity of heat generated in the manner indicated, and the quantity that must be carried away by air to keep down the temperature to the observed limits, it becomes clear that, from the sanitary standpoint, the ventilation of the subway is quite satisfactory. The problem is to reduce the summer temperature by changing the air still more frequently, and it is proposed to effect this by means of electrically-driven fans installed at points where the greatest inconvenience occurs. From the foregoing it will be seen that the New York trouble is quite different from that which still confronts the management of our own electric subways.

Chicago Foundations.

OWING to the unstable character of the site upon which Chicago is built, the foundations of buildings in that city are of special interest to all architects and builders. The subject has been discussed recently by Mr. E. C. Shankland in a paper communicated to the engineering societies of the University of Illinois. As the height of Chicago buildings increased, it became necessary to improve upon the old form of spread footings, and the steel grillage foundation became general. But even then the amount of settlement was considerable, and ranged from 8 in. to as much as 30 in. Although allowance is made for settlement when new buildings are erected, the trouble is that there does not seem to be any finality in the way of subsidence, which is largely due to the action of wind in reducing the load on the windward and increasing it on the leeward side. Within recent times, and especially since the construction of the Illinois tunnel system, some 40 ft. below street level, a very general practice is to use concrete well-foundations, carried down to solid rock. Wells of this kind do not settle themselves, but give rise to settlement in adjacent buildings, owing to the impossibility of guarding against spaces at the back of the lagging used during well construction. One very singular trouble arises in connexion with party wall foundations. For instance, at the east of the Great Northern Theatre and Hotel Building there is a party wall, and, to prevent injury from settlement of the footings, the architect inserted girders, supported on 30-ton jacks, which were screwed up as the foundations settled. The structure is now ten years old, and the jacks have still to be watched and adjusted. This is a striking example of the difficulties that have to be encountered by Chicago architects.

St. Michael's Ch., Burleigh-street, W.C., and the Union of Benefices Acts, London.

BY an Order in Council a scheme has just been ratified for uniting the benefices of St. Michael, Burleigh-street, and St. Paul, Covent Garden, with the consent of the vestries and patrons concerned, under the name of the benefice of St. Paul, Covent Garden. The font, communion table, sacramental plate, and fittings of St. Michael's Church will be transferred to the church of a new ecclesiastical district within the limits of the metropolis, and the net proceeds of the sale of the site and materials of St. Michael's will be applied towards the site and the building of the new church, with its parsonage-house, a repair-fund for the present parsonage-house of St. Michael, and the augmentation of the income of the united benefice. A maximum amount of 8,000*l.* is set aside for the new church, to be dedicated to St. Michael, and the purchase of its site. The present church of St. Michael, of which the interior was renovated forty years ago, was erected after plans and designs by James Savage; the organ, by Gray, was restored in 1871 by Richardson. The church stands upon part of the site of Cecil, afterwards Exeter, House, the town-mansion of Sir William Cecil, Lord High Treasurer, which, Stow says, had been erected on the site of St. Martin's parsonage-house, and its close by Sir Thomas Palmer, *temp.* Edward VI., Queen Elizabeth gave the property to Lord Burghley, who enlarged the house, and there, on July 19, 1561, entertained his Sovereign.

The Bridge of Ayr.

GENERAL satisfaction will be felt that the Town Council of Ayr have, to some extent, at least, re-considered their resolution to rebuild the historic bridge of which they are the custodians. Their decision resulted from a Report by the Burgh Engineer to the effect that the structure was unsafe for traffic. The natural tendency for an engineer under such circumstances is to recommend the construction of a new bridge, rather than to propose remedial measures. In the case of a structure like this, which is sacred to lovers of Burns throughout the world, it is amazing that the idea of demolition should have been entertained for a moment. As Lord Rosebery very aptly said in a letter to the Convener of Ayrshire, "What the Town Council require is not a competent engineer to condemn, but a competent engineer to preserve." It is difficult to believe that a masonry bridge can well pass beyond the stage at which repairs become impossible, and we are glad to know that the Town Council are prepared to give facilities to any engineer of eminence to examine the bridge, and to consider his report. It is not quite clear, however, whether they are ready to pay the necessary fees, or if they expect the "engineer of eminence" to undertake the work gratuitously. Unless a direct invitation be issued, we are not certain that much good will result from the vague announcement that appears to have been made. The matter is one that cannot be allowed to drop, and it is to be hoped that the Town Council will prove themselves worthy of the trust reposed in their hands.

A VISIT TO THE MUSEUM OF SANITARY APPLIANCES, HORNSEY.

AT the request of some of our readers, we have visited the Museum of Sanitary Appliances, which was established by the Hornsey Local Board about thirteen years ago in a corrugated-iron building at North Hill, Highgate. Mr. T. de Courcy Meade, who was at the time the Board's engineer and surveyor, appears to have been the originator of the scheme, and much of the early success of the museum must be credited to his enthusiasm. The building has a total floor-space of nearly 5,000 sq. ft., and contains more than a thousand exhibits. One of the rooms is used as a classroom for the teaching of hygiene, plumbing, and kindred subjects, some of the classes being under the charge of teachers appointed by the Middlesex County Council. The idea of holding classes of this kind in a Museum of Sanitary Appliances is excellent; not only is the work of the teacher simplified, but the students also benefit, as more accurate and more useful knowledge can be obtained from an inspection of the actual appliances than from illustrations and descriptions in books.

So much by way of introduction. Let us now turn to the exhibits themselves, and try to ascertain the real value of the museum as an educational institution, not only for students under the guidance of a teacher, but also for the man in the street. For sixpence we obtain a catalogue of 166 pages, of which eighty-four pages are occupied by a list of the exhibits in numerical order, and the remainder by indices, advertisements, etc. The preface bears the date, "March, 1893." This is somewhat disconcerting. To every purchaser of the catalogue, however, a supplement is presented, and we turn to this in the hope that it will contain a list of all the most recent exhibits, so that with the catalogue and supplement in our hands we can, without very much trouble, make a comprehensive survey of the contents of the museum. Again we are disappointed: the supplement is dated "July, 1894." It bears on the title-page, in red letters, the legend, indicative of early enthusiasm, "First Supplement." As far as we know, it has had no successor. Did all the enthusiasm go with Mr. Meade to Manchester?

We turn to the exhibits with the thought that either they or the catalogues must be somewhat out of date. Stand No. 1 supports the former alternative; it contains, among other things, a wash-out closet of the kind in vogue fifteen or twenty years ago, and an early type of wash-down closet with separate trap and small water area, the pan bearing obvious signs of old age. The next stand confirms this first impression; we find a valve-closet with the check out of order, and another in which the valve does not always close tightly against its seat. We assume that these exhibits have not been changed since the museum was founded, and it would not be fair to mention the names of the firms who, thirteen years ago, presented them to the Hornsey Local Board. Stand No. 3 has recently been brought up to date by Messrs. G. Farmiloe & Sons. The "Wave" and "Quaker" water-closets mentioned in the catalogue have been replaced by the "Wavelet" and "Carbula," which are of the wash-down type. The latter is well-shaped, and has a sufficient water area; the flushing arrangement is, however, the principal novelty. This consists of a regulating valve, operated by a push-button instead of the usual cistern. It is said that the valve can be regulated to give any desired amount of flush. The invention is of American origin, and is decidedly ingenious; but its use in this country will be restricted by the regulations of water companies. Neither the original catalogue nor the supplement contains any mention of these appliances. Nor do they correctly state the exhibits of Messrs. Geo. Skey & Co. (Tamworth) at No. 5; the "Swan," "Torrent," and "Sluice" closets mentioned in the catalogue have been replaced (since the date of the supplement, we presume) by the "Scientific," "Tame," and "Klondyke." It is useless to give additional proofs that the catalogue and supplement stand in need of revision. It is equally obvious that many of the exhibits are out of date, and, while some of these undoubtedly merit a place in a museum used by students under the guidance of a teacher, others might with advantage be discarded in favour of more modern appliances.

No useful purpose would be served by a detailed review of all the exhibits. Manufacturers would not thank us for drawing attention to their discarded inventions, and a wrong impression as to the present state of sanitary science would be given to the general reader by an account of an exhibition in which some of the best modern methods and appliances are not represented. On the other hand, it must be clearly understood that we do not regard the exhibition as without value merely because it is not in every respect up to date. To the student it furnishes a most useful object-lesson—both historically and practically—up to a certain point. It has a wide scope. There are old Roman drain-pipes, more modern drain-pipes choked with roots, etc., and various examples of stoneware pipes with special joints. Drain-traps of many kinds are shown, from the old siphon to the more recent interceptor. There are gullies and waste-water channels, manhole channels and covers, flushing tanks, smoke machines, and other drainage appliances. Baths, lavatories, sinks, water-closets, and urinals are all represented, as well as soil-pipes and waste-pipes, good and bad forms of traps, etc. All the common varieties of water-taps are exhibited, one interesting series having portions cut away to show the working parts. Ventilation is represented by exhibits of air-inlets and extract-cowls, and also by a fan in operation. There are specimens of damp-courses of various kinds, paving slabs of artificial stone, two or three fire-grates, machines for testing cement and drain-pipes (by external and internal pressure), earth-closets, marbles, glazed and ordinary bricks, paving quarries, and other materials and appliances more or less germane to the subject of sanitation. Among the most interesting exhibits, two may be mentioned. One of these is a section of a house showing floors and roof, bath and waste-pipe, soil-pipe, drain, intercepting chamber, etc., all the pipes and fittings being in section longitudinally. The other consists of piers of brickwork resting in a trough of water, one of the piers being without a damp-course, and the others having damp-courses of various kinds. We may add that water is laid on to a number of taps and sanitary fittings so that these can be seen in operation.

This short account of the contents shows that the exhibition is far from useless, but that there is room for improvement there can be no doubt whatever. According to the introductory note in the catalogue, the museum was established by the Hornsey Local Board for the purpose of "bringing together a few specimens of the most improved fittings for the guidance of builders and others interested," and also as a centre for "courses of instruction in sanitary science." Manufacturers and merchants were asked to send specimens of their goods, and it was stipulated that these should become the property of the Board. In the preface to the catalogue it is said that "the Board are desirous of making the museum as valuable and instructive as possible, and will, therefore, be glad to receive any suggestions or criticisms the public may wish to offer." Since the date of this preface the Hornsey Local Board has been superseded by the Hornsey Urban District Council, and this in turn by the Hornsey Corporation, for the district is now a flourishing borough. We shall be right in assuming that the public spirit of the Corporation will not be less than that of the Local Board, and will, therefore, venture to offer some suggestions (in response to the latter's public invitation) with the view of "making the museum as valuable and instructive as possible," but without unnecessary expense.

There are three classes of persons to be considered—first, students; second, "builders and others interested"; and third, manufacturers and merchants who have given, or who may give, specimens of their goods. Students under the immediate guidance of a capable teacher may not be seriously misled by being conducted through a museum containing sanitary appliances of all qualities, good, bad, and indifferent; but this cannot be said of students who have not the advantage of being personally conducted by such a teacher or of builders and others who imagine that the museum contains nothing but "specimens of the most improved fittings"; and manufacturers and merchants, who have given such a large proportion of the contents of the museum, may fairly claim the right of deciding whether the appliances given by them thirteen years ago shall still be exhibited under their names. They cannot retract their gifts, but they ought to have the opportunity of obliterating their names from appliances which they do not now recommend or of substituting more recent inventions. It is no credit to a manufacturer to be represented by obsolete or imperfect specimens of his goods, and, from the business point of view, such an exhibition may be positively detrimental. The difficulty is to reconcile the somewhat conflicting interests of the three classes of persons whom we have mentioned.

To the student it would be an advantage if the good and bad appliances were separated, instead of being exhibited indiscriminately as at present, and such an arrangement would be even more useful to the general public. To effect this purpose adequately, one of the rooms ought to be set apart for appliances which are now known to be seriously defective and for those which are merely of historical interest. There are many things which might be exhibited in this room without offence to anyone, such as certain kinds of drain-siphons, "square" junctions, bell-traps, D-traps, pan-closets, etc., and examples might also be given of badly-laid drains, untrapped waste-pipes, defective joints in soil-pipes, and other faulty methods of executing drainage and plumbing work. Objects of historical interest, such as the Roman drain-pipes already mentioned and the triangular slate drain exhibited, might also be included, as well as the specimens of choked drain-pipes, furred water-pipes, etc. If existing exhibits are transferred to this room manufacturers and merchants whose names appear on them ought to be permitted to obliterate their names. As there are, in many cases, two or more appliances in which the same defects occur, it would be possible to weed out a large number of exhibits, and thus afford space for fittings of more modern type. To obtain these a circular letter might be sent to representative manufacturers and merchants, including all who have already contributed to the museum, and we do not doubt that many would respond favourably as soon as they saw that an earnest effort was being made to bring the exhibition up to date. Unless an effort of some sort is made the exhibition will inevitably become more and more misleading as year after year passes.

ST. MARK'S, VENICE.

THE following is a list of those who have signed the memorial in reference to St. Mark's. The English wording of the memorial, which has been forwarded to the Minister of Public Instruction in Italy, appeared in our issue for June 24 last:—

Edwin A. Abbey, R.A., F.S.A.
Sir L. Alma-Tadema, O.M., R.A., F.S.A.
H. H. Armstead, R.A.
Sir Walter Armstrong (Director of the National Gallery of Ireland).
The Earl of Altamont, F.S.A.
Right Hon. Lord Avebury, D.C.L., F.R.S. (President of the Society of Antiquaries).
John H. F. Bacon, A.R.A.
Sir Benjamin Baker, K.C.B., K.C.M.G., LL.D., F.R.S.
Lord Balcarres, M.P., F.S.A.
Alfred Baldwin, D.L., M.P.
Sir Squire Bancroft.
H. E. Barclay.
Sir Wyke Bayliss, P.R.B.A., F.S.A.
Sir Reginald W. P. Beauchamp, Bart.
John Belcher, A.R.A., P.R.I.B.A.
Reginald Blomfield, A.R.A., F.S.A.
Wilfrid Scawen Blunt.
Frank Bramley, A.R.A.
Right Rev. the Lord Bishop of Bristol.
Thomas Brock, R.A.
Arnesby Brown, A.R.A.
Professor G. Baldwin Brown, M.A.
Right Hon. James Bryce, M.P., D.C.L., LL.D., F.R.S.
E. A. Wallis Budge, M.A., Litt.D., F.S.A.
Lady Burne-Jones.
Sir Philip Burne-Jones.
Sir Edward H. Busk, M.A., LL.B.
Hall Caine.
Sir T. D. Gibson Carmichael, Bart., M.A., D.L.
Sir Charles D. Cave, Bart.
A. Bensley Chamberlain (Assistant Keeper, City of Birmingham Museum and Art Gallery).
Basil Champneys, B.A.
Sir William Chance, Bart., J.P.
Professor A. H. Church, D.Sc., F.R.S., F.S.A. (Professor of Chemistry, Royal Academy).
J. W. Clark, M.A., F.S.A. (Registrar of the University of Cambridge).
Sir Ernest Clarke, F.S.A.
Somers Clarke, F.S.A.
W. Robert Colton, A.R.A.
A. S. Cope, A.R.A.
W. J. Courthope, C.B., M.A.
Right Hon. Leonard Courtney.
Walter Crane, R.W.S. (Com., Royal Crown of Italy).
Eyre Crowe, A.R.A.
Andrew S. Currie.
Lionel Cust, M.A., M.V.O., F.S.A. (Director of National Portrait Gallery).
The Earl of Darnley.
Cyril Davenport, F.S.A.
Mabel Davis.
Professor W. Boyd Dawkins, D.Sc., F.R.S., F.S.A.
H.H. Prince Frederick Duleep Singh, M.V.O., F.S.A.
Alfred East, A.R.A.
Right Hon. Earl Egerton of Tatton.
Sir John Evans, K.C.B., D.C.L., LL.D., F.R.S., F.S.A.
Joseph Farquharson, A.R.A.
His Grace the Duke of Fife, K.T., K.C.V.O.
Luke Fildes, R.A.
Hon. Dudley F. Fortescue.
George Frampton, R.A., F.S.A.
Right Hon. Sir Edward Fry, D.C.L., LL.D., F.R.S., F.S.A.
Right Hon. Lewis Fry, J.P., D.L.
J. Starkie Gardner, F.S.A.
Ernest George, F.R.I.B.A.
Rainald Wm. Knightley Goddard.
Edmund Gosse, LL.D.
Professor W. Gowland (Vice-President of the Society of Antiquaries).
Rev. Canon Greenwell, D.C.L., F.R.S., F.S.A.
Hubert J. Greenwood, F.S.A., L.C.C.
Edward J. Gregory, R.A.
Sir James Guthrie, P.R.S.A.
Arthur Hacker, A.R.A.
Professor John W. Hales, M.A., F.S.A.
The Earl of Harrowby.
C. Napier Hemy, A.R.A., R.W.S.
Professor Hubert von Herkomer, C.V.O., R.A.
J. P. Heseltine.
Thomas Hodgkin, D.C.L., Litt.D., F.S.A. (author of "Italy and her Invaders").
Right Hon. Jonathan Hogg, D.L.
Catherine Horne.
Constance Lucy Marie Horne.
Henry Percy Horne.
Kate Horne.
Mary Larkin Horne.
W. Holman Hunt, O.M.
Violet H. Hunter.
T. G. Jackson, R.A., M.A., F.S.A.
Fanny Jarvis.
W. Goscombe John, A.R.A.
Right Hon. William Kenrick (Chairman of the Birmingham Municipal School of Art and Museum).
Sir James Kitson, Bart., M.P.
Guy Francis Laking, M.V.O., F.S.A.
Lady Lawson.
B. W. Leader, R.A.
Professor W. R. Lethaby, F.S.A.
William Logsdail.
G. B. Longstaff, M.A., M.D.

R. S. Lorimer, A.R.S.A.
J. Seymour Lucas, R.A., F.S.A.
Vernon Lushington, K.C.
The Earl of Lytton.
Hon. Neville S. Lytton.
Robert W. Macbeth, R.A.
J. W. Mackail, M.A., LL.D.
George A. Macmillan, J.P.
J. MacWhirter, R.A.
Sir Theodore Martin, K.C.B., K.C.V.O., LL.D.
A. Warton Matcham.
Right Hon. Sir Herbert Maxwell, Bart., M.P. (President of the Society of Antiquaries of Scotland).
J. T. Micklethwaite, F.S.A.
Viscount Midleton (President of the Surrey Archæological Society).
Edward Moon, M.P.
Lady Ottoline Morrell.
Sir Lewis Morris, M.A., J.P.
A. H. Hallam Murray, F.S.A.
John Murray, J.P., D.L.
John L. Myres, M.A., F.S.A. (Lecturer in Classical Archæology in the University of Oxford).
Francis M. Nichols, M.A., F.S.A.
His Grace the Duke of Norfolk, Earl Marshal, K.G.
Philip Norman (Treasurer of the Society of Antiquaries).
Alfred Parsons, A.R.A., R.W.S.
Sir Henry Peto, Bart., D.L.
John S. Phené, LL.D., F.S.A., F.R.I.B.A., M.R.I.
Colonel G. T. Plunkett, C.B. (Director of the Science and Art Museum, Dublin).
The Hon. Gerald Ponsonby.
Sir Francis Powell (President Royal Scottish Society of Painters in Water-Colours).
Sir W. H. Preece, K.C.B., F.R.S.
G. Hilton Price, F.S.A., F.G.S. (Director of the Society of Antiquaries).
G. W. Prothero, Litt.D., LL.D. (Editor of "The Quarterly Review").
Rev. Canon Rawnsley (Hon. Secretary of the National Trust).
Charles Hercules Read (Keeper of Mediæval Antiquities in the British Museum, and Secretary of the Society of Antiquaries of London).
Professor Luigi Ricci (Founder of the Dante Society).
John Richmond.
Charles Ricketts.
Briton Riviere, R.A., D.C.L.
Sir J. C. Robinson, F.S.A.
Edward Robert Robson, F.S.A., F.R.I.B.A. (late Government Architect).
His Grace the Duke of Rutland, K.G., G.C.B.
The Lady Margaret Sackville.
John S. Sargent, R.A.
Sir A. S. Scott-Gatty, F.S.A. (Garter Principal King of Arms of England).
Arthur Severn, R.I., J.P.
C. H. Shannon.
G. Bernard Shaw.
R. Norman Shaw, R.A.
Cecil H. Smith, LL.D.
Solomon J. Solomon, A.R.A.
The Right Rev. the Lord Bishop of Southwark.
Sir Isidore Spielmann, F.S.A.
R. Phené Spiers, F.S.A., F.R.I.B.A.
William Barclay Squire, M.A., F.S.A., F.R.G.S.
H. Heathcote Statham, F.R.I.B.A. (Editor of the *Builder*).
The Lord Stavordale.
John J. Stevenson, F.S.A., F.R.I.B.A.
Sir John Stirling-Maxwell, Bart., M.P., F.S.A.
Marcus Stone, R.A.
G. A. Storey, A.R.A.
His Grace the Duke of Sutherland, K.G.
The Lord Ronald Sutherland-Gower, F.S.A.
A. G. Temple, F.S.A. (Director of the Guildhall Art Gallery, London).
Sir Charles Tennant, Bart., J.P., D.L.
The Right Hon. The Lord Tennyson, G.C.M.G.
Henry S. Tuke, A.R.A.
Thackeray Turner, F.S.A.
G. Harry Wallis, F.S.A. (Art Director and Curator of Museum and Galleries of Art, Nottingham).
Whitworth Wallis, F.S.A. (Director of the City of Birmingham Museum and Art Gallery).
Sir Thomas Wardle, F.G.S., F.C.S., J.P.
E. P. Warren, F.S.A.
Sir Ernest A. Waterlow, P.R.W.S., R.A.
B. H. Weyland.
Sir Aston Webb, R.A., F.S.A., F.R.I.B.A.
R. H. Wood, F.S.A., F.R.G.S.
Hon. Percy Wyndham, J.P., D.L.
Robert Yerburgh, M.P.

OLD BEAUPRÉ, GLAMORGAN.

BEAUPRÉ MANOR HOUSE, which was originally the seat of the Cecil family, is pleasantly situated, and overlooks a charming valley, on the outskirts of the village of Cowbridge, about twelve miles from Cardiff.

The buildings, the greater portion of which are in ruins, were erected about the year 1586, but the Renaissance porch, which is described in "Gwilt's Encyclopædia," was added in the year 1600, as inscribed on three panels containing the following:—

Say: cowldst thou ever fynd or ever heare or see, wordly wretche or coward prove a faythfull frynde to be, Ry. Charde Bassett having to wyfe Katherine, doughter to Sir Thomas Johns Knight bwylt this porch, with the tonnes in Ano. 1600. His yeres 65, his wife 55.

The buildings are now owned by the Bassetts, and one or two rooms are in the occupation of a farmer; but very little remains of the stately structure, except the beautiful entrance-porch, the entrance-doorway, and the ivy-clad walls. W. EATON.

KETTERING CHURCH SCHOOLS.—The Boys' National School has just been reopened, after renovation and enlargement. The building has been transformed into a block, with central hall and class-rooms. The contract was carried out by Messrs. C. & F. Henson, and the architect was Mr. J. T. B. Blackwell.

THE PROFESSIONAL AND THE AMATEUR.

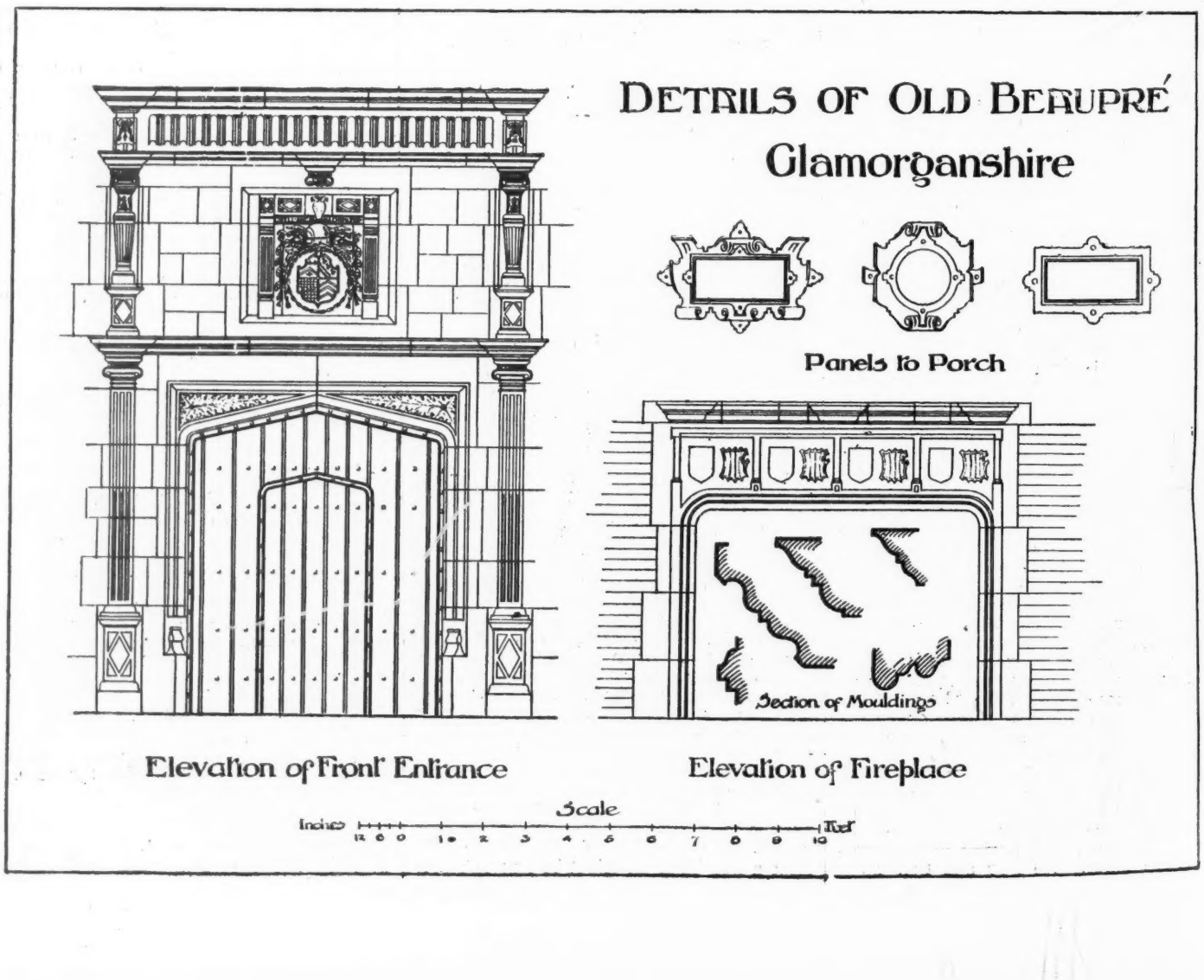
FROM A CORRESPONDENT.

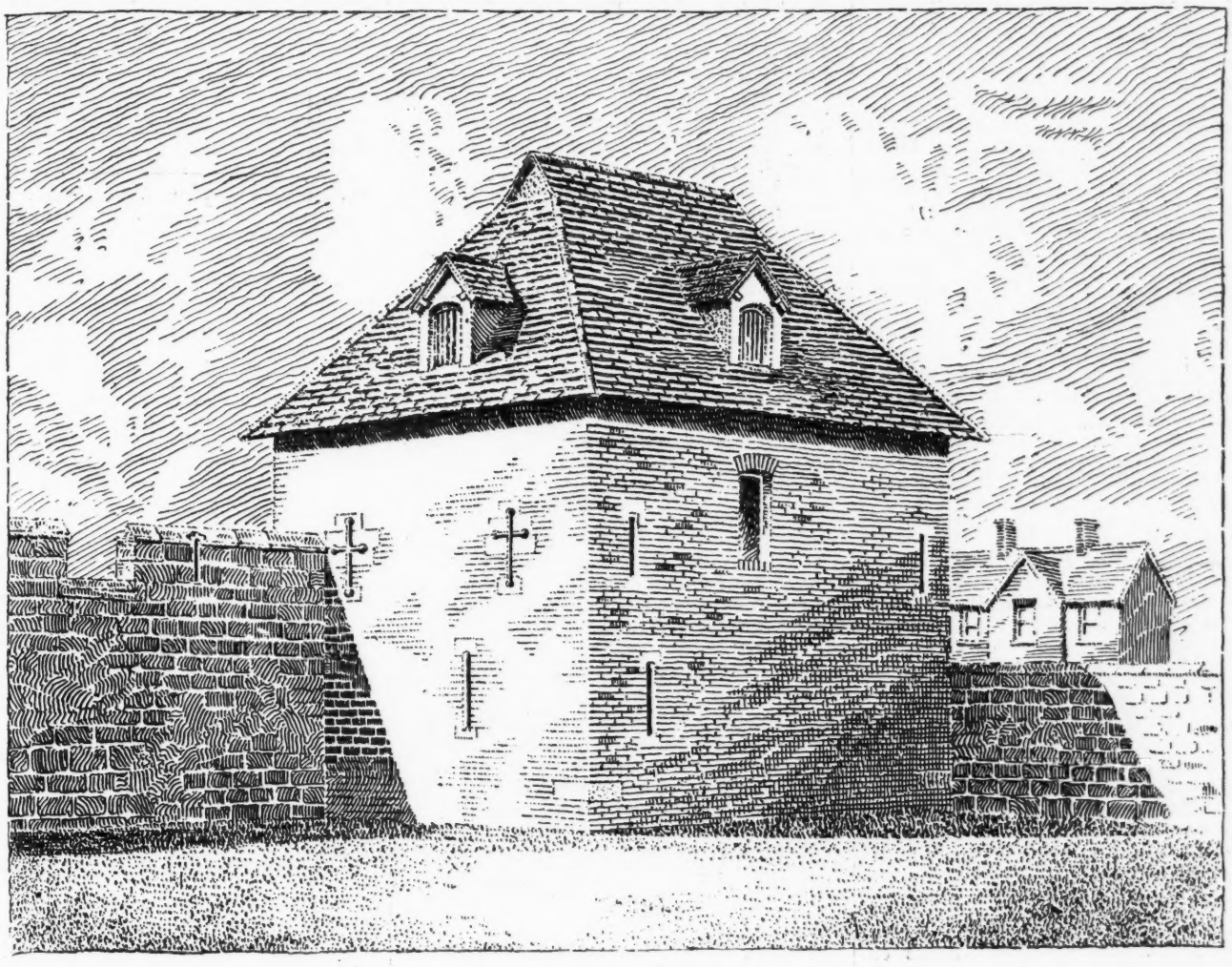
IT is common knowledge that of those who are in a position to build for their own needs or amusement, or who are entrusted by others with the disposal of funds for like purposes, the majority are profoundly ignorant both of the science and of the art the exercise of which they are forced to criticise. In a word, they are not amateurs. We often wish they were; but, alas, it is from the lips of amateurs that our greatest condemnation is to be heard. Unlike the professional in every other branch of life's work, we in no sense enjoy the confidence of the amateurs. In short, our relationship with the public, who must needs employ us, is distressingly paradoxical. We bewail the ignorance so noticeable in the majority of our clients, whilst by the enlightened few we discover ourselves to be very generally repelled! When, moreover, the ignorant are called upon to take sides, which side do they take?

Let us, then, clear the ground for a discussion of the propositions implied by these sad facts by observing that there is but one sort of amateur whose existence is at all relevant to the points at issue. The presence of incompetent persons in the world, indeed (so long as there be at any rate some who are the reverse), proves no more than the reality of human frailty.

We may, then, altogether dismiss from our minds all such persons as attend University Extension Lectures for the sole purpose of learning the conventional nomenclature of Gothic enrichments; all who, by learning something of the archæology of Canterbury Cathedral, really suppose that they are thereby fitted to criticise the complex plans and sections of some important municipal or national structure of to-day. Let us rather consider the position of men—and there are not a few—who for enthusiasm and for pleasure's sake alone, plan and sometimes actually build, their own houses; men who do so, moreover, without founding upon sand, without forgetting the staircase, or desecrating the country-side by the creation of a long-lived ugliness.

Suppose these men to have had the elements of what we call a professional training—and





The Red Tower, York. From a Sketch by Mr. W. Eaton, A.R.I.B.A.

they are one of ourselves, and our talk is at an end. But they have not. On the contrary, they ridicule the results of our years of office work; they pooh-pooh the imitative accomplishments of our school of art studies; they rail at the examinations of our learned bodies; and they call upon us to explain away the career of that eminent astronomer and Oxford don, Sir Christopher Wren.

It need not be supposed that by adopting this attitude they are pretending to hold a brief for the work of an ignorant genius as against that of an accomplished man of moderate ability. The point at issue is, how rationally to account for the success as a designer of buildings of a man whose training has not only been different from, but is in many ways opposed to, that which is more or less laid down by the profession as proper for the architect of to-day.

In view of the fact that the public may shortly be called upon to decide what it really means by the term "architect," the following consideration regarding the views of a certain section of the public having the welfare of English architecture at heart may not seem altogether out of place.

The successful amateur of to-day, as of yesterday, may be seen to acquire his skill in one of two ways: either, like Sir Christopher Wren, he is gifted with the eye of an artist, an eye which travel and observation have refined, whilst he possesses a really sound knowledge of plain and solid geometry—in which case his enthusiasm is almost certain to be for the classic styles; or he possesses, in addition to the essentially artistic vision, a thorough mastery of some inevitable building material such as wood or stone.

The writer knows more than one or two instances of gentlemen thus qualified whose practical knowledge has enabled them to see in the work of past ages the significance of every moulding. They have thus been able to do what it is indeed hard to do, to criticise—not merely to admire—the works of their predecessors. The result, the inevitable result, upon their own labours has been a certain loss of what the moderns call "freedom"; their admiration for tradition is rendered perhaps too strong, and a contentment with old forms becomes too deep-seated to admit of other than small and very personal manifestations of originality. But it may be maintained that after all such is the spirit which has always animated the real stylists of the world. Indeed, it is boldly asserted that originality in style must be, in a measure, unconscious if it is to be ultimately far-reaching.

So much, then, for the decorative ideals of many who are by nature and practice amateurs in a very real sense. In the midst of the somewhat motley array of architectural fashions with which we are to-day surrounded, these men are content to dedicate their labours to a just and living interpretation of some well-tried style from which it is their intention never to depart, believing that by such action alone, on the part of individuals, can we hope to set in motion again that healthy and gradual progress of evolution within the bounds of a consistent æsthetic system, which, after all, is the most any stylist can look for.

In this attitude of mind they perceive no bar to an understanding of the constructional and other building problems of the day.

They assert that to a man possessed of sound practical knowledge in a broad sense no latter-day constructional ingenuity will prove unintelligible. They deny that an architect of to-day need make himself familiar with all that the specialist who should work under him must needs know. They go further. They say that he cannot hope to do so without losing in exchange some of that vital artistic and comprehensive discretion which alone entitles him to supervise the whole scheme of the building.

The fault of our latter-day system may indeed be that too little is left to those who serve under the architect; that the latter strives when young to learn too much of what he could at any moment easily find out; that the first-rate architects of to-day are so in spite of a system of education only suitable for the production of draughtsmen, clerks, and, in some instances, theoretical builders.

The efforts made by academic bodies to induce such persons to undergo a course of semi-archæological study, the results of which take the form of laborious measured drawings, are held by many to be ineffective, since no amount of scholastic study can enable a man to design with that knowledge of material and style which practical work and a free-hand record of observation so easily and naturally gives him. It is maintained that the tendency of to-day is to become possessed of a heterogeneous mass of notions drawn from a rapid and superficial survey of the architecture of all ages—such, however, as to breed so great a confidence that there are not many modern architects who would hesitate to design in detail every part of their buildings. Upon the artistic vitality of the ancient and beautiful craft of the mason and of the carpenter this system has had a stultifying effect, without any gain to the consistency or wisdom of the master mind.

There are many within, as well as without, the profession to whom these views do in a large measure appeal, and they would vigorously oppose any scheme of Registration which should propose to restrict professional practice to those who have satisfied examiners in academic subjects, or which should declare a clerical apprenticeship of three years to be an essential part of an architectural training.

On the other hand, it would seem to them in every sense valuable that the title of architect should be restricted to those who have obtained the Fellowship of the Institute, or of some other recognised body, upon the submission of satisfactory original designs.

N. F. B.

THE RED TOWER, YORK.

THE little red tower, Foss Island's-road, is a very good example of the few specimens of mediæval brickwork to be found in York.

Its brick walls and red-tiled roof present a pleasing contrast against the white stone walls of the city.

Its bricks, which are XVth century work, are 10 in. and 10½ in. long, 5 in. wide, and from 1½ in. to 2 in. in thickness.

W. EATON.

PREMISES, REGENT-STREET, S.W.—New premises are being erected on the site of St. Philip's Church, Regent-street (south), by Mr. J. W. Lordon, contractor, after plans and designs by Mr. Williams.

ARCHITECTURAL SOCIETIES.

THE MANCHESTER SOCIETY OF ARCHITECTS.—Some members of this Society paid a three days' visit from August 4 to August 7, to study the stone buildings of the Cotswold district. Chipping Campden was chosen for the headquarters, and provided ample material for study. Unfortunately heavy rain restricted the choice of subjects for sketching to those where some shelter could be obtained; this made the sedilia in the church particularly valuable, while the Market Hall afforded a refuge from the rain. The workshops of the Guild of Handicraft were examined with great interest. Sunday, the one fine day, was spent in walking to Broadway. The Society has also made visits to Messrs De Bergue & Co.'s ironworks, and to the new Manchester Fire Station, Messrs. Woodhouse, Willoughby, & Langham, architects.

Books.

William Hogarth. By G. BALDWIN BROWN, M.A. London: The Walter Scott Publishing Company. 1905.

THIS is one of the books of the "Makers of British Art" series. There could hardly be a better specimen of a short artistic biography; charming in literary style, and containing much sound and sensible artistic criticism. Professor Brown is not, like too many biographers, carried away by the desire to make out his subject an epitome in himself of all the excellencies of art; he can see Hogarth's shortcomings; but he also sees, what many people still cannot see, that Hogarth was an artist in his special quality of artistic execution, and not merely a satirist using pictorial representation as a vehicle of expression. The book is illustrated by twenty-one small plates from Hogarth's works, which enable the reader better to follow the author's comments on some of these.

No doubt, as Professor Brown admits, those engravings by Hogarth which can only be understood by a series of notes and explanations at the foot can hardly be reckoned as works of art; they are rather to be regarded as satirical documents. But in the several series to which he more especially owes his fame—the "Harlot's Progress," the "Rake's Progress," and more than all in what to our thinking is his masterpiece, the "Marriage à la Mode," he appeals not to any special satirical perception in regard to special events or characters, which for another generation have to be translated and annotated, but to feelings and perceptions which are common to all humanity. If the "Marriage à la Mode" had been painted in this generation, the dresses, the surroundings, and some of the incidents would be different, but what is at the root of the whole set of pictures would be there still, just as in Shakspeare we find our own feelings and passions expressed in the language and through the personages of Shakspeare's day or of his field of poetic creation. In the "Marriage à la Mode," indeed, Hogarth shows a genius rather analogous to that of Shakspeare. This series alone is sufficient to raise Hogarth far above the category of a mere moralist in painting. There is nothing more pathetic in art than the face of the dying mother in the last scene of the "Marriage."

The biography brings before us many characteristic traits of the "little man in the sky-blue coat" who was such a well-known figure in the London of his day: of his kindness of heart, his strong hatreds (especially of foreigners), his unabashed vanity, so naïve and child-like in its expression that it is rather amusing than offensive.

One example of Hogarth's power of intensifying a position by the significance of a single detail we should like to recall, because we do not find any reference to the picture in the biography. It is one that was exhibited a good many years ago at one of the loan exhibitions at Burlington House, under we forget what title, in which a young married lady has lost, in gambling with a young officer, all the money that her husband had sent that morning for some special purpose (the husband's letter lies on the floor), and apparently all her jewellery, and is offered them all back by the winner as the price of her honour. What gives the real effect and intensity to the picture is one little detail—the single word *Nunc*, inscribed in capitals on the top of the timepiece in the room. That one pointed word, emphasising the all-importance of this moment's decision, is a wonderful stroke; it raises the picture from a mere scene of immoral bargain to a great moral lesson.

Italian Architecture. By J. WOOD BROWN, M.A. (A. Siegle.)

THIS little volume, eighty-five pages in length, forms a valuable addition to the Langham series of art monographs. It gives a clear, though somewhat brief, account of the principles and progress of architecture in Italy from Roman to modern times, and illustrates the account with numerous colour plates and photogravures. The leading features of six distinct developments are touched upon, and the steps traced by which the four fundamental elements of architecture—the column, arch, vault, and dome—freed themselves from the cast construction of the Roman, and by successive combinations assumed new functions, and thereby formed new styles. The book is too short to give more than the barest outline of the subject, but each chapter is headed by a useful list of authorities on the particular period.

Painters' Oils, Colours, and Varnishes. Edited by PAUL N. HASLUCK. London: Cassell & Co. 1905.

THIS book is, according to its Preface, a digest of information contributed at various times by chemists and colour manufacturers, to the columns of a technical journal, which the Editor has arranged in convenient form for reference. But it has, perhaps inevitably, the shortcomings of its origin. Its scientific information could hardly suffice for any but an elementary student of chemistry, its description of manufacturing processes would not be of much assistance to the manufacturer, while its information on the everyday difficulties met with by the architect or the builder is slight. It is, therefore, difficult to understand to what particular class of readers it is especially addressed. Having said thus much, however, it must be allowed that the compiler has succeeded in weaving together the materials at his disposal clearly and interestingly, a merit not always found in popular digests.

The contents of the book are grouped under the headings of (1) Oils, (2) Pigments, (3) Driers, and (4) Gums, Resins, and Varnishes. In reference to oils it is explained that their value depends on their colour, the palest being the most expensive, and that the name, as ordinarily employed, includes two entirely different classes—(*a*) The volatile or essential oils, which include turpentine and distil unchanged on heating; and (*b*) the fixed or fatty oils, which contain carbon, hydrogen, and oxygen, and decompose on being heated to a high temperature. The chemical change which oils undergo in the process of drying is clearly explained, and a simple method of testing their properties in this respect is given, viz., by spreading a film on a piece of glass and heating in an oven to 212 degrees, when the resultant should cease to be "tacky."

The importance of age in connexion with linseed oil (and hence with white lead) is explained. The origin and mode of preparation of colours and pigments is fully described, and simple tests are given for the discovery of adulterants in white lead, a very important matter. The advantage of red lead over white as a covering coat for ironwork is accounted for by its greater elasticity. Information is not, however, given as to why zinc white, which is employed so universally on the Continent, and which is so valuable for the durability of its colour, is so little employed in this country.

The term "driers" or "drying oils" is, as is pointed out, somewhat of a misnomer, the process of hardening being one of absorption of the oxygen of the air, rather than of evaporation. Turpentine, it may be remembered, is not a drier but a dilutent. Of all the chapters perhaps that on varnish is the most disappointing, as the difficulties met with in ordinary use are hardly touched upon. Everyone who is concerned with the employment of this material has probably met with disappointing results, even when the best quality has been specified, and some simple tests and guide for use would have been of considerable assistance, and would have enabled the blame for any failure to be correctly apportioned between the manufacturer and the workman. However, when all is said, there is a great amount of useful information to be found in the some one hundred and sixty pages of the book.

The Popular Handbook on House-Painting, Decorating, Varnishing, Graining, etc. By HERBERT ARNOLD. Manchester: John Heywood. 1905.

THIS is a useful little shilling book on the processes of painting, considered mainly in a practical sense, though there are occasional suggestions as to what produces the best effect, which, as far as we have observed, are sensible. The process of stencilling is also described; best methods of cleaning paint, etc. As to graining, which is described and recommended for such things as the internal woodwork of the inferior portions of a house, it is needless to say that we disapprove of it altogether, and think the chapter on it had been better omitted. And the author had better also have let alone the subject of "how to harmonise colours," on which his ideas are very rudimentary. But the main object of the little book is purely practical, and in that sense it is well done and useful.

Lynton, Lynmouth, and the Lorna Doone Country. By JOSEPH E. MORRIS, B.A. London: The Homeland Association. 1904-5.

LYNTON and Lynmouth, connected as they now are by rail with Barnstaple, will no doubt become yearly better known, together with the romantic scenery which forms the setting of Blackmore's well-known novel. Architecturally, however, the district is poor, and there is nothing of interest, except the church at Oare, and the two churches at Culbone and Porlock, both of which lie quite on the border of the district treated. But this beautiful district may possibly be taken in many cases conjointly with a visit to the architecturally richer neighbourhood of Minehead. In any case, this little handbook will be useful, and its letterpress and illustrations are fully up to the standard of excellence reached by other handbooks of this series. There is also a very good map to a scale of 1 in. to the mile, reproduced from the ordnance survey.

Tools for Engineers and Woodworkers: Including Modern Instruments of Measurement. By JOSEPH HORNER, A.M.I.Mech.E. London: Crosby Lockwood & Son. 1905.

THOSE who are familiar with the previously published works of the author will not expect to find in this volume a severely scientific treatise for the guidance of the tool-maker, including metallurgical data and mathematical solutions for such problems as are presented by certain aspects of tool design. Mr. Horner confines his attention largely to a plain, straightforward description of hand tools, and to such cutting and other instruments as are held in appliances of the kind known as "machine tools." He deals also with measuring instruments, which, it may be said, are not strictly tools but are really such if a broad definition be accepted, and ought not to be otherwise regarded in view of the direct relation they bear to modern systems of manufacture. Throughout this book the man at the bench is never far from the author's thoughts, the general principles underlying the types of tools described are sufficiently explained, and simple instructions for their employment are plentifully given. The classification adopted is excellent, and, although a certain amount of overlapping is unavoidable, a series of five main groups suffices for the inclusion of practically all the tools required by the engineer and woodworker—excepting, of course, those appliances which do not come within the scope of the manual. In Section I., five chapters are apportioned to "The Chisel Group," including chisels and allied forms for wood and metal working, planes, and shearing tools. "Scraping Tools," although admitted by the author to form a large group and to be of much importance, are accorded less than three pages, which constitute Section II. Section III. describes "Tools Related to both Chisels and Scrapes," and Section IV., various forms of percussive, moulding, and miscellaneous tools; while some practical hints on hardening, tempering, and

grinding tools are given in Section V. The last section is the longest in the book, and, under the title of "Tools for Measurement and Test," contains much useful information relative to those appliances which are now indispensable adjuncts to the modern workshop, where the interchangeable system of manufacture is practised.

Mechanical Appliances, Mechanical Movements, and Novelties of Construction: An Encyclopædia of Mechanical Movements and Mechanical Appliances. By GARDNER D. HISCOX, M.E. London: Archibald Constable & Co., Ltd. 1905.

MR. HISCOX'S work on "Mechanical Movements" is already well-known, and the book now published may be regarded as a second volume of that useful compendium. Comprising nearly one thousand illustrated paragraphs relating to mechanical appliances of almost every conceivable variety, this compilation brings home to the reflective mind the wonderful fertility of the human brain. The author wastes no words in description, makes no comments, and uses no diagrams, but such as help to make the printed descriptions still more clear. We must add, however, that a most useful series of formulæ is given in the section for calculating the power of spiral springs. To give an idea of the universality of the work, we may mention the following as a rough summary of its principal contents:—The transmission and measurement of power; steam, gas, hydraulic, air, and electric-power devices; transport appliances; gear motion and controlling devices; mining, factory, engineering, and structural devices; miscellaneous devices; "draughting" devices; and perpetual motion. There is nothing stereotyped about the method of the author, and he seems to have included a good many of, if not all, the newest devices introduced. Exception may be taken to the inclusion of the section devoted to perpetual motion, and to the comparatively slight notice taken of internal combustion motors, and particularly to the omission of all reference to suction producer-gas generators and engines. Other omissions will no doubt be regretted by some who procure this book, and some readers will probably think the descriptions of oil-cooking stoves, potato-washing machines, and artificial limbs might have been omitted without disadvantage. Reason for criticism of the kind is unavoidable, however, in a book of this character, and, in spite of any little points of the kind, we feel sure that all architects, builders, and contractors will find this an invaluable book of reference.

Elements of Mechanics: Forty Lessons for Beginners in Engineering. By MANSFIELD MERRIMAN, Professor of Civil Engineering in Lehigh University. First Edition. First Thousand. New York: John Wiley & Sons. London: Chapman & Hall, Ltd. 1905.

WE are glad to find in the elementary volume written by Professor Merriman evidence that the movement inaugurated in this country for the teaching of mathematics in a simple manner has extended to the United States. The author does not profess that his treatise will do more than enable the student to master the fundamental principles and methods of mechanics, but we feel sure that if its contents are thoroughly mastered they will constitute a solid foundation upon which further knowledge of the subject may be safely built. In the elementary course of study here presented advanced mathematics are not employed, and anyone who possesses a sufficient knowledge of geometry, algebra, and trigonometry will find it possible to follow the treatment without difficulty.

The Plenum or Propulsion System of Heating and Ventilation. By HAROLD GRIFFITHS, A.R.I.B.A., F.S.I., etc. London: Simpkin, Marshall, Hamilton, Kent, & Co. 1905.

VERY little information on this important subject can conveniently be obtained by architects, except from ventilating engineers more or less interested in the advocacy of certain types of apparatus, and Mr. Griffiths has done good service in writing the interesting book which lies before us. As he modestly states in the preface, he has "attempted . . . to bridge the gap between expert knowledge and no knowledge at all," and we have no hesitation in saying that he has succeeded admirably in his attempt. The architect who reads the book will not be enabled to design a scheme for mechanically heating and ventilating a building, but, if he assimilates the information contained in it, he will certainly be able to criticise any scheme which is put before him and to satisfy himself whether it is likely to prove effective or not. The book contains only three illustrations, and none of these shows a complete system of ventilation applied to a building; such an illustration indeed would be foreign to the author's purpose. The model specification, drawn up in the interest of architects, cannot fail to be of service, and the chapter on testing a system of plenum ventilation is also valuable. We need scarcely say that Mr. Griffiths is an ardent advocate of mechanical ventilation, but his advocacy does not prevent him from pointing out many defects in existing installations and also the greater cost of mechanical heating and ventilation, both initially and in maintenance, than of "natural" ventilation combined with other methods of heating. More might have been said about the size and kind of buildings for which an architect would be justified in recommending one system in preference to another. The division of the book, which runs only to 107 pages (including twelve pages of preliminary matter), into fourteen short chapters facilitates reference, but an index would have been still more useful.

Small Destructors for Institutional and Trade Waste. By W. FRANCIS GOODRICH. London: Archibald Constable & Co. 1904.

IN this book the author has handled a somewhat delicate subject in a manner to which little, if any, exception can be taken. The subject is delicate, for the simple reason that the author is commercially interested in one particular type of the general class of apparatus to the discussion of which his work is devoted. Under such circumstances he must have felt it an invidious task to undertake a description and an enumeration of the relative merits of destructors made by his own and by rival firms. Careful perusal of the book shows very little evidence of personal bias, a result on which the author may be congratulated. The first two chapters are largely of persuasive character, being evidently intended to convince hospital and other authorities of the undoubted necessity for adopting scientific means for the disposal of waste matter. Our own readers are probably at one with the author on this point, and consequently will find more serviceable material for study in the three succeeding chapters, wherein different types of institutional refuse destructors are described and illustrated. The four types of furnace described are Meldrum's, Warner's, Horsfall's, and Sargeant's, and, while all of these are illustrated, the number of blocks allotted to the first mentioned is noticeably predominant, and the casual reader will possibly conceive a more favourable opinion of this destructor than of the others, a conclusion that may be correct or not. Our advice to readers, as in all cases where specialities are involved, is that before making a final decision they should obtain full particulars from the respective makers, and inspect examples of the apparatus in actual use.

In the last chapter, the author considers in an able manner the disposal of trade refuse, and makes out a clear case for the adoption of modern methods for this purpose. The book is well written, and as a convenient summary of the subject it deserves a place on the bookshelf of every architect who is interested in the design and equipment of public institutions.

Gas Producers for Power Purposes. By W. A. TOOKEY. London: Percival Marshall & Co. 1905. Price 1s. net.

THIS little book briefly describes in simple language the principal features of the plants commonly used for producing low-grade gas for power purposes. It is specially addressed to purchasers of power-producing machinery and to those who erect or have charge of such machinery.

The greater part of the book is devoted to a description of "Suction" plants. Producer gas is made by passing air (and usually also steam) through a bed of anthracite, coke, or other form of carbon heated to a very high temperature; and until recently it has been customary to force the current of air through the incandescent carbon by means of a "blower" or other device. In a suction plant, however, instead of forcing air into the producer, the air and steam are drawn or "sucked" into it by the gas engine itself upon its inspiration stroke. A suction plant is designed to generate gas only at such rate as is demanded by the load upon the engine. We imagine, however, that the gas produced in any given plant under varying loads is far from uniform in composition throughout the day, and before recommending the general introduction of suction plants into small town workshops we require to have before us evidence to prove that they will not create a nuisance, and that the discharge of the foul waste waters into the public drains or sewers is permissible.

With a suction plant neither blower nor gasholder is required; and the plant has, therefore, the advantages over ordinary producer plants of greater compactness and lower initial cost. In addition to describing both "pressure" and "suction" gas producers, the author briefly refers to the manufacture and properties of coal gas, carburetted water gas, and oil gas, but his knowledge of these latter subjects appears to be superficial. His statement that the cost of carburetted water gas production is less than that of coal gas requires modification, and he is in error when he states that the oil used for oil gas manufacture does not contain any sulphur.

The Sanitary Inspector's Handbook. By ALBERT TAYLOR, Sanitary Inspector, City of Westminster. Fourth edition. London: H. K. Lewis. 1905.

CONCISE, practical, and up to date, this book should commend itself to a wider public than that for which the introduction states it to be specially designed—namely, the sanitary inspectors of England and Scotland, or those engaged in preparing themselves for that profession. It is true that the pages devoted to the duties of an inspector of nuisances are specialist in character; but a considerable proportion of the contents consist of valuable information upon practical points of general utility to the householder and citizen. The useful "Alphabetical Synopsis of the Provisions of the Public Health and Other Acts," applicable to the Metropolis, England and Wales, and, in this edition, for the first time, to Scotland also, would alone entitle the little volume to a place on the writing-tables of professional men or others interested in or responsible for the public health. The sections quoted are arranged in parallel columns, which permit of ready reference and rapid comparison.

While the omissions from this last issue of what is now regarded as a standard book are unimportant, the additions justify the slight increase in bulk—notably that of the London County Council By-laws relating to the construction of drains, water-closets, and soil pipes. It is satisfactory to note the stress laid upon the water test for drains as being that upon which reliance must be placed; and the methods prescribed for the employment of disinfectants in general use are quite abreast of the times, though more space might with advantage have been devoted to consideration of the relative merits, in this connexion, of saturated and superheated, current and confined, steam. A somewhat more detailed treatment of the subject of mechanical ventilation would also prove helpful to those who may be required to recognise and surmount some of the working difficulties which frequently discredit the system. It would be advisable also in a future edition to condemn as inadmissible the employment of a cork, as an alternative to a glass stopper in the collection of water samples. Probably the perpetuation of this error is an oversight, for the book as a whole is as accurate as it is comprehensive, and entirely worthy of the position which the call for a fourth edition shows it to have attained.

Modern Lightning Conductors. By KILLINGWORTH HEDGES, M.Inst.C.E., etc. Crosby Lockwood & Son. London. 1905.

THIS book is an illustrated supplement to the Report of the Lightning Research Committee recently published in the *Journal* of the Royal Institute of British Architects. The illustrations are very interesting, and give one a clear idea of what is likely to happen when a building is struck by lightning. Mr. Hedges' suggestions of possible reasons why certain protected buildings were struck are instructive. He also explains the modern methods of fitting buildings with lightning conductors. To the ordinary reader this book will be of interest, and to anyone who has to design a system for protecting a building from lightning strokes it will be helpful. It is satisfactory to note that, notwithstanding the

great progress made by physicists in extending our knowledge of the laws governing impulsive rushes of electricity, the recommendations of the Committee are not very different from those published by Sir W. Snow Harris sixty years ago.

Arbitrations: A Text-book. By the late Professor BANISTER FLETCHER. Third edition, revised and enlarged, and largely rewritten by Banister F. Fletcher, F.R.I.B.A., and H. Phillip Fletcher, F.R.I.B.A., Barrister-at-law. London: B. T. Batsford. 1904.

WHEN a book has reached a third edition it is clear that it meets a demand, and the concise and clear character of this book are good reasons for its consistent sale. It is as well written and revised as can be, and we doubt if it would be possible to find a more satisfactory handbook.

Sanitary Law and Practice: a Handbook for Students. By W. ROBERTSON, M.D., D.P.H., and CHARLES PORTER, M.D., M.R.C.P. London: The Sanitary Publishing Co., Ltd. 1905.

THIS is a comprehensive book divided into sections. Section II., for example, is "Appointment of Health Officials," and in it the several parts of the Acts by which the subject is regulated are inserted. The result is a great deal of information in a short space. The book is at once accurate and full, but we should, having regard to its scope, have liked a fuller index. An author knows where to find this or that information—the reader does not, and needs plenty of guidance.

Illustrations.

CHANCEL SCREEN, BRISTOL CATHEDRAL.

THE screen, which is executed in Bath stone, consists of five cusped arches, three of which are four centred and of equal width supported on four moulded shafts, while the two outer are much narrower, canted on plan, and abut on to the tower piers. On each shaft immediately below the springing line of the arches are four niches, with carved buttresses and canopies, containing sixteen figures of persons connected with the history of the cathedral fabric. The arches are elaborately moulded and carved, and the crocketted labels, which, on the west side of the screen spring from figures of angels, rise in an ogee form, and carry the five principal figures in the composition. Between the principal figures are traceried panels and groups of niches, containing fourteen figures of saints of the English church. The whole is finished with a cornice of angels and a traceried cresting, which is 21 ft. above the nave floor. The eastern side of the screen is simpler in character, and has only four figures, which represent Old Testament characters connected with the building of the Temple of Jerusalem.

MALVERN FREE LIBRARY.

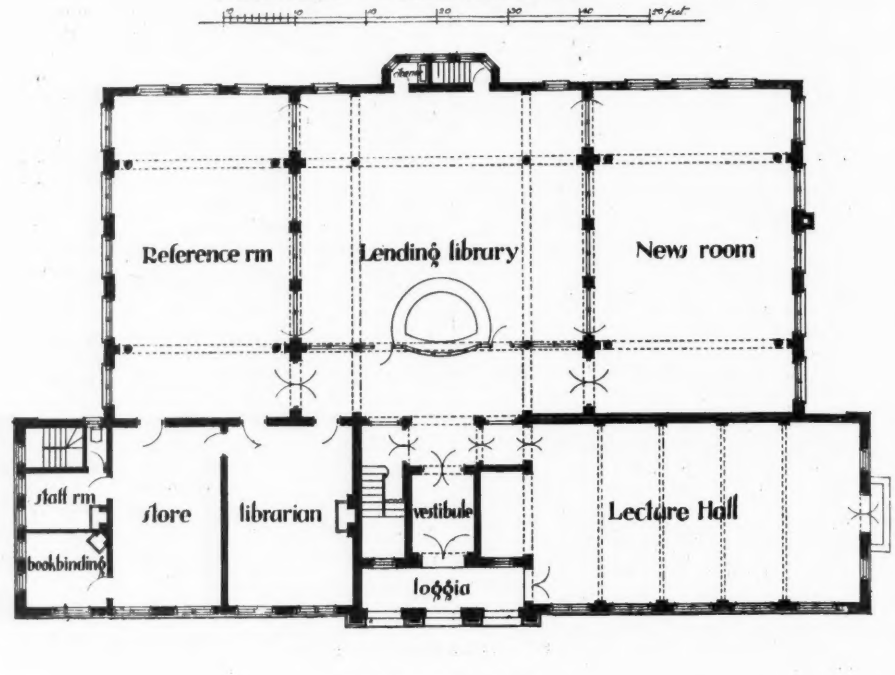
THIS building, the gift of Mr Carnegie and Mr. Dyson Perrins to Malvern, is now being erected in the town on a site given by Sir Henry Lambert, Bart. The site is a large one, and the building is being kept at the back, while the forecourt is to be laid out as a public garden for the benefit of the town. The building is to be worked on the open-access system. A children's reading-room has been provided in the basement, with ample book storage, while the caretaker's quarters are arranged in the roof over the librarian's room and store.

The architect is Mr. Henry A. Crouch, of Gray's Inn-square, whose designs were selected by Mr. Henry T. Hare, the assessor, in a recent open competition. Mr. James Herbert, of Wolverhampton, is the builder, and Mr. H. K. Applin the clerk of works.

NELSON FREE LIBRARY.

THE disposition of the plan has been governed by the limited size of the site at the disposal of the architects, and the plan has been arranged with a view to working the library with as small a staff as possible.

MALVERN FREE LIBRARY



GROUND PLAN

The principal rooms are grouped round the entrance hall, which gives access to all parts, and all persons entering or leaving are under the observation of the staff at the delivery counter.

The building will be faced with Catlow stone and the roofs covered with green slates.

Internally the walls of the principal rooms will, as far as possible, be panelled with wainscot oak, and the floors will be of pitch-pine wood blocks; the entrance hall and vestibule being paved with black and white marble paving in squares.

The building will be heated by low-pressure hot water, with ventilating radiators, and the lighting will be by means of electricity.

The estimated cost is 5,500*l.*

ORGAN CASE, HEADINGLEY HILL CONGREGATIONAL CHURCH, LEEDS.

THIS work was carried out last year. The organ case is constructed in Austrian oak, as is also the rostrum, communion table, and panelling; the shields are of white sycamore wood, carved and inlaid. The carving was executed by Mr. Milburn, of York; the joiner's work was carried out by Messrs. J. Tomlinson & Son, of Leeds; and the organ was constructed by Messrs. Abbott & Smith, of Leeds. The late Mr. Francis W. Bedford, F.R.I.B.A., of the firm of Bedford & Kitson, was the architect.

BRASS OF SIR SIMON DE FELBRIGG AND HIS WIFE.

This beautiful brass is to be found in Felbrigg, a lone village of Norfolk, three miles from the nearest post-office, about three miles south-west of Cromer.

It is one of the five which alone remain commemorating Knights of the Garter. Sir Simon was Standard-Bearer to Richard II. The standard shows the arms attributed to St. Edward, which form part of the arms of Westminster at the present time, which were, az., a cross fleurie between five martlets or. These are impaled quarterly—one and four, France (ancient); two and three, England. These were used by Richard II. The arms, arg., an eagle displayed with two heads, sable (gules?), of Bohemia. The lion rampant is for Felbrigg. The fetterlock was the badge used by the House of York. Margaret "nacione et gen'roso sanguine Boana" was daughter and heiress of the Duke of Silesia and Theise, himself nephew of the King of Bohemia, cousin of Ann, Queen of Richard, to whom, as the epitaph proceeds to inform us, Margaret was lady-in-waiting. She died in 1416.

It is plain that Sir Simon, when he placed this monument over Margaret, had intended that he himself should be laid in the same grave—hence, the date of his own death left blank, and which has never been supplied, and for the following reason:—The disconsolate widower married again, his second wife being a widow, Catherine Green. He died in 1442-3, and was buried by her in the chapel of the Dominican Friars, in Norwich, now St. Andrew's Hall. Catherine, the second spouse, dying in 1459, was buried by his side. Hence, the absence of the date of his death on this monument and the cause why poor Margaret remains lonely.

The brass measures 96 in. by 50 in.; height of figures, 63 in.

E. TENNYSON D'E. JESSE, B.D.

POLICE AND FIRE STATION, WINDSOR.—His Royal Highness Prince Christian recently paid a visit to Windsor to lay the foundation-stone of a new police-station, to which also is to be attached the new central fire station. Besides the proceedings connected with the police-station, His Royal Highness drove to the new extension of the Alexandra Gardens by the river side, and subsequently informally opened the new reception-room converted from the "Shambles," as the old meat market beneath the Guildhall was called. The total length of the new buildings, including the fire-station, will be 200 ft., with a depth of 100 ft., and a yard behind 112 ft. in length by 53 ft. in width. In the basement will be a drill hall for the force, 104 ft. in length by 25 ft. in width, and adjoining will be the public lavatories, etc.; a workshop under the fire-engine house for engine repairs, &c., and a bath-room for the firemen, while at the other end will be a number of necessary offices. On the ground floor will be the new police-court, 45 ft. in length by 25 ft. in width and 24 ft. high. Adjoining the court will be the magistrate's and solicitors' consulting-rooms. The court will be on the right-hand side of the principal entrance, and on the left will be the public waiting-room, charge-room, head constable, and inspector's offices. At the back will be the prisoners' cells, eight in number, two being for women and the remainder for men. On the first floor will be the Watch Committee's room, 30 ft. by 20 ft., with retiring-room adjoining, which will have a store-room for police purposes. The caretaker's-rooms are also on this floor, quarters for six unmarried constables, a parade-room, recreation-room, and other offices. At the left, and facing St. Mark's-place, will be the head constable's residence, consisting of two floors. At the St. Mark's-road end will be the new fire-station, consisting of an engine house 34 ft. by 27 ft. and 15 ft. high, fitted with self-opening doors on a lever being pulled by the driver of the steam engine. Over this will be the caretaker's residence. A yard 40 ft. by 30 ft. will be available for drill purposes. The buildings are faced with red brick and artificial stone dressings; the roof will be red tiled, with two wooden ventilating towers, covered with copper. The clerk of works to the Corporation is Mr. E. Averne, by whom the plans were drawn under the direction of the Surveyor, and the clerk of works to the contractor is Mr. Fishbourne.—*Windsor and Eton Express.*

COMPETITION.

BAPTIST CHURCH AND SCHOOLS, CONSETT.—The designs submitted in a recent competition by Messrs. George Baines & Son, 5, Clement's-inn, Strand, London, for the new Baptist church and schools at Consett, Co. Durham, have been adopted.

BOOKS RECEIVED.

FIRE TESTS WITH FLOORS (British Fire Prevention Committee's Report). (London: 1, Waterloo-place, Pall Mall.)

FIRE TESTS WITH DOORS (British Fire Prevention Committee's Report). (London: 1, Waterloo-place, Pall Mall.)

STANFORD'S NEW MAP OF THE COUNTY OF LONDON. Twenty sheets. (London: E. Stanford, 12-14, Long-acre, W.C.)

TRADE CATALOGUES.

MR. F. GEERE HOWARD sends us a book of illustrations of his electric-light fittings. They are mostly in good taste, though we do not like a candlestick in the form of a Corinthian column (No. 17). Time was when that was considered an artistic treatment; but those times are gone by. The brass candlesticks, Nos. 19 and 21, are good; so is the lantern in wrought iron, No. 62. The majority of the designs however, though well intended and fairly good, just miss the touch that an artist in metal-work would have given them.

The London Hydraulic Power Company send us a well-written pamphlet, entitled "Lifts: Hydraulic Power *v.* Electric Power," the object being to put the case for hydraulic lifts in such a form that the reasons for the claims in favour of hydraulic power may be readily appreciated by intending lift users. Since the application of electricity to machinery of the kind, the question as to the most desirable form of motive power has become distinctly controversial. So far as inherent safety is concerned, everything is in favour of the hydraulic direct ram lift, the hydraulic suspended lift comes next, and the electric lift last. Of course, in the two latter types, various safety devices are introduced, and, if these never get out of order and never fail to act in the manner intended, all classes of lift are equally safe. This pamphlet points out the complicated arrangements required to meet some risks involved by electric lifts which do not exist in a hydraulic lift. On the question of economy, it is contended that hydraulic lifts take far less power to do a given amount of work than electric lifts, this view being supported by a diagram taken from the Proceedings of the Institution of Civil Engineers. Statements expressing a diametrically opposite opinion have been widely published, and those who desire to investigate their validity will find some useful help in the pamphlet to which we refer, although all the arguments it contains are necessarily of an *ex parte* character. One important advantage claimed for the hydraulic lift has certainly operated as a disadvantage. We refer to its durability. There are numerous old hydraulic lifts in use to-day, in good condition, but of such obsolete type that they constitute object lessons which distinctly assist those who argue in favour of electrically operated lifting machinery.

Mr. J. L. Mensch, of Chicago, sends us his latest catalogue of reinforced concrete construction, a pamphlet consisting of photographic views representing various examples of structural work executed in accordance with the system of the author. The views show the great adaptability of concrete-steel to buildings of all classes, and as several of the photographs reproduced were taken at different stages during the erection of the buildings, the reader is able to form a very fair idea of the methods of construction adopted.

MISSION CHURCH, PONTNEWYNYDD.—Lady Lethbridge laid the corner foundation-stone of a new mission church which is being erected at a cost of 1,500*l.* in Hanbury-road, Pontnewynydd, in connexion with St. Luke's Church, on the 8th inst. The building will provide accommodation for about 250 people. It will be a stone structure, with terra-cotta and red brick dressings, with chancel, nave, organ chamber, and vestry. Mr. D. J. Loughor, of Pontypool, is the architect.

The Student's Column.

STEAM BOILERS AND PIPES.—VII.

BOILER SETTING (*continued*).

HAVING settled the arrangement and dimensions of the flues around the boiler, the blow-off pit, with a recess for the blow-off outlet and elbow, and the main flue remain for attention.

When only one boiler is in question the blow-off pit is generally made square in plan, the dimensions depending mainly upon the size of the blow-off cock and pipe. If two or more boilers are being laid down, the pit should extend continuously along the front of the series, so as to provide accommodation for the common blow-off pipe. An average inside width for the blow-off pit is 3 ft., measured from the front cross wall of the bolier brick-work to the outer wall of the pit. This gives ample space for getting at pipe-joints and for the reception of boiler feed pipes, should it be decided to run them along the pit.

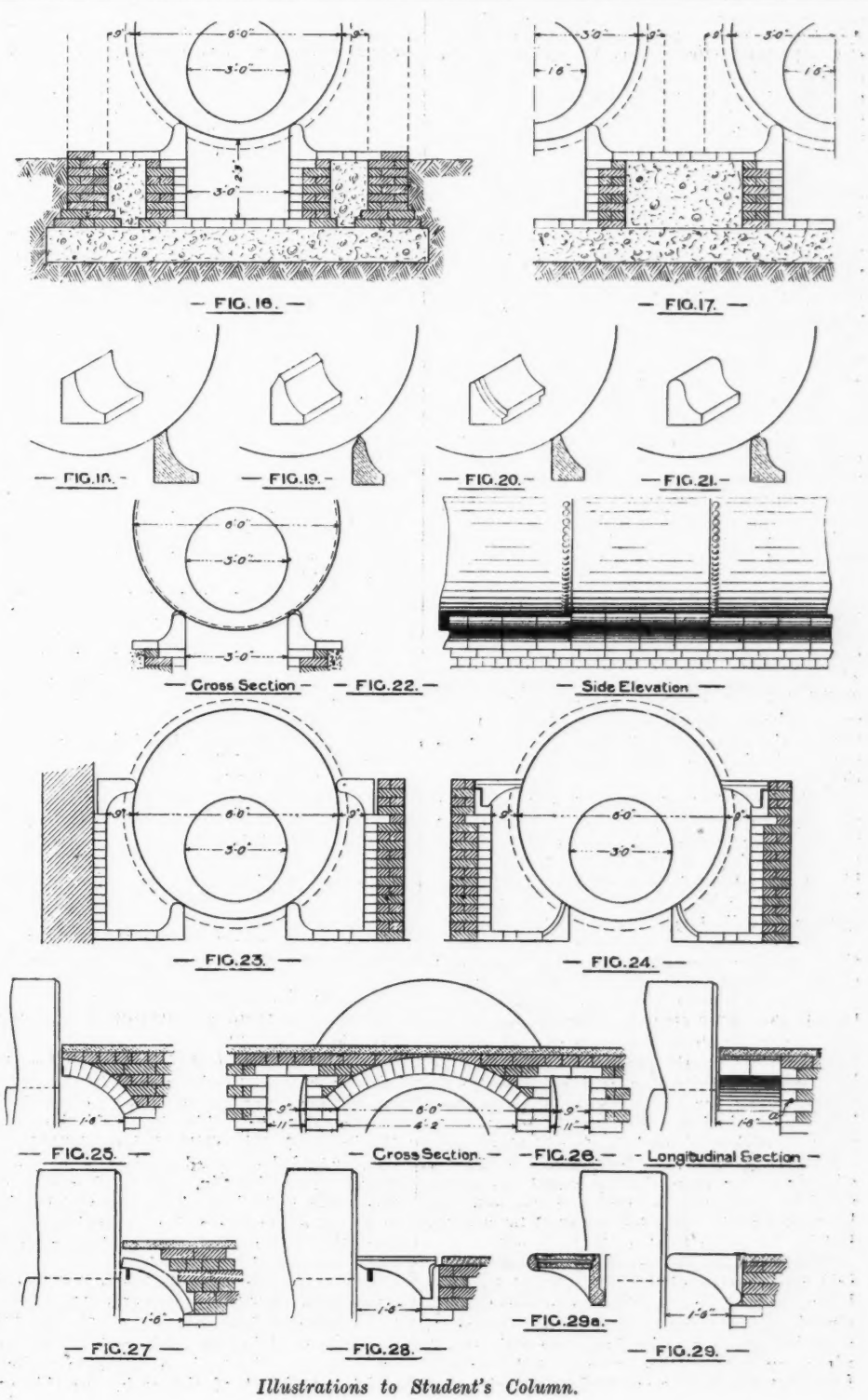
The recess for the blow-off outlet must be adapted to the requirements of the boiler to be fixed. It may be built semi-circular or angular in plan, as shown in Figs. 13, 14, and 15, *ante*. Here, again, care should be taken to give sufficient room for attention to the joints of the blow-off fittings.

The dimensions of the main flue behind the boiler depend on the size and number of boilers to be served. It usually extends from the level of the bottom flue floor up to within a few inches of the top of the boiler brick-work. Its width should never be less than 1 ft. 6 in. for the smallest boiler, and may be 4 ft. or more for a battery of the largest-sized boilers. A good general rule is to make the flue width equal to half the diameter of the boiler for a series of two or three boilers. For a single boiler the width may be about 20 per cent. less.

The general concrete foundation for the boiler brick-work should be continued in full thickness below the main flue, and in reduced thickness the blow-off pit.

In commencing to build the flues, the first part of the brick-work to be undertaken is that constituting the side walls of the bottom flue. Then, if the outer walls are to be built up from the foundation-slab, they must be finished to the level of the bottom flue walls, and the intervening spaces filled with brick-work or concrete, as shown in Fig. 16.

An alternative method of construction is shown in Fig. 17, where the walls and floor of the side flues are supported on concrete carried up from the foundation bed.



Illustrations to Student's Column.

As shown in Figs. 16 and 17, the side walls of the bottom flue are 14 in. thick, and consist of ordinary brick with a 4½-in. lining of fire-brick well keyed in at the top. It is not desirable to continue the keying downwards, as this mode of construction makes it difficult to renew fire-brick linings without causing injury to the other brick-work. As there can be no question of air infiltration through the bottom flue, these walls may be built of good stock bricks, apart, of course, from the lining. The side wall on the left hand of Fig. 16 is also 14 in. thick, a dimension which is generally sufficient for the flue walls of the largest Cornish and Lancashire boilers; but it is not unusual to make the outer wall or walls of a series of large boilers 14 in. thick in addition to the fire-brick lining, and sometimes to provide an air space in each outer wall. Fireclay must be employed for all flue linings and for brick-work in contact with the boiler, as lime mortar readily absorbs moisture, and so leads to corrosion.

The boiler is supported by fireclay seating blocks fixed at the top of the bottom flue walls. Various types of such blocks are available in the present day. Ordinary patterns of fireclay blocks offer a bearing surface of between 3 in. and 4 in., as shown in Fig. 18. One great disadvantage of this pattern is that it covers up a considerable area of the boiler surface in such a manner as to make thorough inspection very difficult. Another serious objection is to be found in the injurious effects usually following the contact of brick surfaces with boiler plates, and the liability of such surfaces to collect dampness arising from sweating or leakage, thereby exposing the metal to corrosive influences.

Seating blocks of the ordinary type are often made with much narrower bearing surfaces. A new pattern of the Sankey block is made with a section similar to that in Fig. 19, with the object of reducing the bearing surface to the smallest possible width, thus facilitating inspection of the plates from the bottom and side flues. The only objection to this type is that the sharp edge seems to be undesirably weak, and therefore more liable to be crushed or fractured than the bearing surface of other types of block.

Fig. 20 illustrates the Marsh overlapping seating block, made with a rebated joint so as to prevent the leakage of furnace gases from one flue to another. These blocks are made with 1¼-in. and 2-in. bearing surfaces.

Another improvement is represented by the Poulton seating block, which has a curved end, and so reduces the bearing surface to a mere line, as shown in Fig. 21. The line of contact is thinner than that given by the block illustrated in Fig. 19, but the plates on either side of the bearing are not quite so accessible, owing to the rounded contour of the upper end. This small disadvantage is counter-balanced by the greater strength of the curved end as compared with the knife edge of the angular end.

With the object of minimising the amount of chipping, packing, and fitting, rendered necessary by the in and out lap of the large and small rings of the boiler shell, seating blocks of all kinds are now made in two heights for each pattern. The two sizes are usually described as "short" and "long."

Fig. 22 includes a section and side elevation showing the application of long and short seating blocks to a cylindrical boiler.

At places where the ring seams of the boiler shell come upon the seating, the blocks must be recessed as necessary to make room for the rivet heads, and the spaces should be filled in with fireclay, which can easily be cleared away for the purpose of inspection. The longitudinal seams must always be kept clear of brick-work and fireclay blocks.

The front end of the boiler should be slightly lower than the back end, so as to provide for complete emptying through the blow-off outlet. The fall adopted in practice is ¼ in. for every 10 ft. of boiler length.

When the boiler has been placed on its seat and exactly adjusted, it should be carefully wedged in position to prevent accidental displacement. In cases where two or more boilers have to be fixed, the main steam pipes can be temporarily connected to make sure that the boilers are truly vertical. The slightest movement of a boiler while it is being built in may give considerable trouble. We have in mind an instance of this, where two boilers were being installed without any precaution to guard against shifting. They had been carefully adjusted before building commenced, but when the contractor delivered the steam pipes and valves—too late altogether—it was discovered that one of the boilers had rotated slightly so that the flanges of the connecting pipes could not be brought together. Fortunately, the movement had been so slight and the contact of brick-work with the shell had been so minimised that by the aid of a jack the boiler was restored to the vertical position without any injury or serious trouble. Still, considerable expense and inconvenience might have resulted, and experience of the kind is best avoided.

Assuming the boiler to be finally adjusted in position, the work of building up the flues is the next operation.

The walls of the side flues are carried up to the level of the horizontal centre line of the boiler, the face lining each flue being of fire-brick, as in the case of the bottom flue walls, and keyed at the top only.

If, as illustrated in Fig. 23, the boiler is to be installed near an existing wall, some brick-work can be saved. The existing wall need only be faced with a 4½-in. lining of fire-brick. Instead of arching the side flues with ordinary arch blocks and fire-brick, as in Figs. 13 to 15, they may be finished by special covers, as shown in Figs. 23 and 24.

The side flues of the boiler in Fig. 23 are shown with Poulton curvilinear flue cover blocks, which require no covering brick-work or stone flagging, and can be readily removed for the purposes of inspection. These covers are made in "long" and "short" patterns, so as to provide for the large and small rings of the boiler shell.

The side flues of the boiler in Fig. 24 are covered with Marsh fire-brick covers and blocks, the latter being cemented in position for the purpose of providing a seat for the arch covers, the outer ends of which rest lightly against the boiler shell. The covers and blocks are formed so that an open joint is provided to allow for expansion of the boiler when under steam. This joint is packed with slag wool or other material to take up the expansion of the boiler shell. The sides of the covers overlap so as to prevent the infiltration of cold air and the outward leakage of heat. As the covers are merely placed in position without any cementing material, the side flues can be opened for cleaning and inspection with very little trouble.

At the back end of the boiler one wall of each side flue is formed by the outer wall of the downtake. In this part of the side flues the dampers frames are fixed, the bottom of each damper being a few inches above the flue bottom, so as to allow for the accumulation of dust.

The downtake flue, for boilers arranged as in Figs. 14 and 15, has a 14-in. end wall faced with fire-brick on both sides, and 9-in. side fire-brick walls. In very small boilers the thickness of these walls may be reduced to 9 in. and 4½ in. respectively, should this be necessary. When a division wall is employed in the downtake of a Lancashire boiler, the thickness should be 4½ in. thick.

As the upper part of the downtake flue is wider than the lower part, the thickness of the walls is increased towards the bottom flue, as shown in Figs. 14 and 15.

Various methods of covering the downtake flue can be adopted.

An old-fashioned way is to build a fire-brick arch from the back wall to the end of the boiler, the arch being covered by brick-work, and this in turn by stone flagging. If this method be adopted, the arch should be turned against a horizontal angle-bar, as in Fig. 25, fixed across the side walls and about ½ in. from the boiler, so as to allow space for expansion and to keep the boiler free from contact with the wide surface of brick-work.

A better way of building a brick arch-cover is to turn it between the side walls of the downtake flue, as in Fig. 26, embedding a steel tie-rod in the brick-work of the back wall, as at (*a*), to help the side walls to resist the thrust of the arch. In this case, also, the arch should be kept ½ in. free from the boiler end.

Both of the foregoing methods involve some difficulty in securing a gas-tight joint between the end of the boiler and the brick-work.

Fireclay arch blocks are almost invariably used in the present day for covering downtake flues. If covered with brick-work, as shown in Figs. 13 to 15, ordinary arch blocks are little better than brick arches, for they cannot accommodate themselves to the expansion and contraction of the boiler.

Fig. 27 shows the manner in which an ordinary downtake cover block could be fixed to allow for expansion and contraction of the boiler, without involving leakage of the furnace gases. In this case the block rests upon a steel bar near the boiler, and is free to rotate about its lower end, but the construction of the block is not well adapted for this purpose.

To provide more satisfactorily for expansion and contraction, various special types of fireclay arch covers have been devised, these blocks being formed so that when placed in position the upper end rests lightly against the back of the boiler, and the lower end is shaped suitably for angular motion. As the boiler expands the block rotates slightly about the point of support, and as the boiler contracts it drops back towards its original position. Thus the cover is always in contact with the end plate of the boiler, and so prevents the escape of heated gases.

Fig. 28 illustrates the Marsh adjustable downtake cover as fixed in position. The free end of the block rests upon a steel bar, which must be high enough above the furnace tube to prevent contact with flame. The other end of the cover is supported by a block, in the recess of which it is free to rotate as the boiler expands. The covers are made with rebated sides, so as to prevent the escape of heat, and can readily be lifted out for boiler inspection purposes.

Fig. 29 represents the Poulton downtake cover. The rounded end of this block facilitates sliding over the end plate of the boiler, and rotation about the points of support. A T-bar dust cover is laid over the cavity between the block and the brick-work. Similar covers are also made hollow, so as to reduce weight and the radiation of heat. For boiler inspection purposes one of the downtake covers should be of the type shown in Fig. 29*a*, having a manhole with double lids.

OBITUARY.

MR. S. MATHER.—The death has just occurred of Mr. Samuel Mather, Surveyor to the Surbiton Urban District Council. Mr. Mather, who was sixty-five years of age, was an associate member of the Institution of Civil Engineers, and a member of the Sanitary Institute. He was a native of Nottingham, and one of his earliest appointments was that of assistant surveyor to his father, the late Mr. S. Mather, at Ely. Subsequently he proceeded to Russia, to superintend the carrying out of a waterworks scheme at Veronig. In July, 1871, he was appointed Surveyor to the old Improvement Commission (now the Surbiton District Council), and the following year he was also appointed Inspector of Nuisances, and continued to hold the joint offices until 1896, when he gave up the position of Inspector of Nuisances.

MR. J. SALMOND.—The death took place, on the 14th inst., of Mr. James Salmond, civil engineer, Dundee. For over half a century he had been connected with his profession in the city, and was largely employed in agricultural work, many of the steadings and farmhouses in the district being either built or remodelled by him.

THEATRE ROYAL, HALIFAX.—This building was opened on the 4th inst. The structure occupies the site of the old theatre, including the old Shakespeare Hotel, the shop adjoining, and four cottages, etc., in Shakespeare-street. The site is rectangular and open on three sides. The principal entrances are from Southgate. Separate lavatory and cloakroom accommodation for ladies and gentlemen is provided for each class of seat. Special provision has been made for easy transfer from inferior to superior seats without having to leave the house or go back to the box-office. The two circles are carried on steel cantilevers, dispensing with columns. The staircases throughout are fireproof as well as the partitions of the dressing-rooms. The building has been designed by and carried out under the superintendence of Messrs. Richard Horsfall & Son, architects, of Halifax.

GENERAL BUILDING NEWS.

BAPTIST TABERNACLE, BARKING.—This building is being entirely remodelled internally and galleries are being introduced. The contract is let to Messrs. Sands & Burley, of Walthamstow, the amount being 1,744*l*. Messrs. George Baines & Son, Clement's-inn, Strand, W.C., are the architects.

LIBRARIES FOR THE KING'S NORTON DISTRICT.—Owing to the gift of 12,500*l*. made by Mr. Andrew Carnegie, for the purpose of erecting libraries and reading-rooms in the urban district of the King's Norton and Northfield Council, it has been found possible to provide seven such institutions in the various centres of population. Moseley and King's Heath, in combination, will be provided with a library and reading-rooms; a similar institution will be built at Stirchley, and also at Selly Oak. The amount allocated for each of these buildings was 3,000*l*. In addition to these three buildings, branch libraries are to be provided at King's Norton and Northfield; and three reading-rooms for Bartley Green, Beoley, Rednal, and Rubery. The King's Heath Library (from the designs of Mr. Latham) has a stone façade, the entrance and vestibule leading to the reading-room and the lending library; and, at the rear, to the reference library. The reading-room has a length of 36 ft. by 24 ft., and there is an annexe for newspaper frames, 24 ft. by 10 ft. Offices are also provided for librarian. The buildings at Selly Oak and Stirchley (to the plans of Mr. J. P. Osborne), will be of red brick with stone dressings. The accommodation will be somewhat similar to that at King's Heath. A reading-room for women is situate on the second floor. Messrs. Webb & Crowder are the builders.

INFECTIOUS DISEASES HOSPITAL, STRICHEN, N.B.—The new hospital, which has been built by the Deer District Committee for the treatment of infectious diseases arising within the district, and to supersede the cottage hospitals at Old Deer and Crimond, was opened on the 2nd inst. The hospital, which stands on a site north of the village of Strichen, occupies an area of 2½ acres. It is on the villa principle, has an elevated southerly exposure, and consists of five blocks of buildings. The scarlet fever ward, which is built on the north-east boundary of the site, contains male and female wards with four beds in each, of the prescribed area of 2,000 cubic ft. In connexion with each of these wards are two isolated wards for special cases. The nurses'-room is between the male and female wards and the isolated wards. The entrance door enters into a broad passage from the lobby, from which access to the male and female wards and also the nurses'-room is obtained. At the end of each ward bath-room and lavatory accommodation is provided. Other two blocks are erected near the western boundary of the site, and in which are to be treated typhoid fever, diphtheria, and other cases. Each of these blocks contains male and female wards with two beds in each, while a room for the nurse and bath-room accommodation is between. The administration block, in the centre of the feu, is a two-story building containing the following accommodation—On the ground floor there is the matron's-room, nurses' sitting-room, doctor's-room, discharge-room, with the necessary bath and lavatory accommodation, kitchen, scullery, etc., while on the ground floor there is provided matron's bedroom, four nurses' bedrooms, bath-room accommodation, servants' bedroom, and a room for napery. There is also a laundry block, built along the north boundary, and to the rear of the administration block. This is a one-story building, with a drying loft above, and contains a wash-house, laundry, rooms for infected and disinfected clothing, napery, ambulance shed, tool-house, mortuary, coal-house, etc. In connexion with the arrangements of the various blocks, which are prepared according to plans by Messrs. Walker & Duncan, C.E., all the requirements of the Local Government Board have been complied with. The buildings are erected with rubble got in the vicinity, with dressings from New Pitsligo. The heating arrangements are wholly by fire-places, and glazed-ware stoves; and the buildings are equipped with telephones between the administration block and the various ward blocks and out-houses. The water supply is derived from springs upon the farm of Brawnsbog. The water is gathered into a storage reservoir near the offices of Brawnsbog, which has a capacity of 20,000 gallons. The head of water between the reservoir and the hospital buildings is between 60 ft. and 70 ft., and from the reservoir the water is delivered to the hospital by a 3-in. cast-iron main, which will be sufficient not only for the requirements of the hospital, but also for the purpose of fire-extinguishing. The grounds are laid out to provide airing ground for the patients. The total cost of the hospital, with its eighteen beds, amounts to 7,000*l*. The contractors for the work were:—Masons, George Cooper & Son, Boyndlie, Fraserburgh; carpenters, Edwards & Rae, Dyce; slaters, M'Intosh & Connon, Peterhead; plasterers, James Scott & Son, Aberdeen; plumber and waterworks, William Leask, Alford; painter and glazier work, J. A. Ogilvie, New Pitsligo.

CARNEGIE FREE LIBRARY, PORTADOWN.—The free library which has been erected in Portadown was opened on the 1st inst. The building has been erected by Mr. Robert Cullen, from plans prepared by Mr. J. W. Walby. It is built with brick, and faced with red compressed brick and red sandstone dressings. The roof, a portion of which is flat surrounded by an iron railing, is covered with green Cumberland slates. The building occupies 60 ft. frontage. On the first floor the following accommodation is provided:—A vestibule entrance on the left, 14 ft. by 9 ft., with lantern light and panelled ceiling; a hall, communicating with the last and with reading-room through swinging door; reading-room, 30 ft. by 21 ft. by 14 ft. high. The staircase hall is 17 ft. by 12 ft., and the staircase is in three flights 4 ft. wide. The building will be heated with hot-water pipes from the heating-chamber under the lavatory. On the first floor is the reference library, ladies' room, and librarian's room. The reference library measures 27 ft. by 17 ft., with an additional part 15 ft. by 12 ft. Each room is provided with fresh-air inlet tubes, and shafts for the extraction of foul air are provided to all the rooms and carried through the roof to one of Boyle's patent air-pump ventilators.

PUBLIC LIBRARY, MANOR PARK.—The opening of the new Carnegie Public Library in the Romford-road by the Right Hon. James Bryce, M.P., took place on the 3rd inst. The building comprises a newsroom, having space for forty newspapers; a magazine-room, with seating accommodation for forty-two readers; and a lending library, with space for 12,000 volumes. There is also the lecture hall, which will hold 250 people. The building itself has cost 4,900*l*.; the furnishing, 500*l*.; and sundries, 150*l*.; making a total of 5,550*l*. The plans and designs were prepared by Mr. A. H. Campbell, the Borough Surveyor.

COUNTY COURT, CROYDON.—The new County Court which has been erected at Croydon is situated on Scarbrook-hill. The building is composed of red brick with stone dressings. The builders are Messrs. James Smith & Sons, of South Norwood, and the architect Mr. Hawks, of His Majesty's Office of Works. The estimated cost of the work is 8,000*l*. In the basement are rooms for the bailiffs. On the ground floor there are the usual offices for the staff, and at the rear of the building, on the same level as the offices, is the registrar's court, the size of which is 50 ft. by 30 ft. The flooring is composed of maple-wood blocks, and the fittings generally will be of oak. The corridors and entrance-hall are paved with mosaic. Rooms on the ground floor are also provided for the registrar, and another as a women's waiting-room. The judge's court is on the first floor. Its dimensions are 36 ft. by 27 ft. On the same level is the judge's private room, and others for the barristers and solicitors. The caretaker's apartments are at the top of the building. The structure throughout will be lighted with electricity, while in the winter months the heating will be provided by means of hot-water pipes. The wall decoration will be plaster, with a dado. The stone carving of the building is by Messrs. Daimond, of Vauxhall Bridge-road.

NEW COUNTY AND GRAND STAND, STOCKTON RACECOURSE.—The building operations for the alterations and additions to the county stand and the new grand stand to replace the old structure were started in May this year, and have been completed for the August meeting. The architects for the structures are Messrs. Mangnall & Littlewood, Manchester, and the contractors are Messrs. R. Neill & Sons, Strangeways, Manchester. The size of the county stand is 85 ft. by 50 ft., and it accommodates about 1,000 people. The grand stand is 172 ft. by 50 ft., and accommodates more than 2,000 people. Slated roofs entirely cover the whole area of both stands, so that everyone would be protected from inclement weather. The new grand stand is built of local bricks. Under this stand is situated a large general refreshment-room, 63 ft. by 35 ft. (in which is an island bar), telegraph office, a dining-room, 52 ft. by 35 ft., with kitchen and store-rooms for food, wines, etc. The alterations and additions to the county stand include a new club lunch-room, kitchen, and stewards' retiring-rooms. The upper story outer walls of this building are of rough cast. The natural difficulties of the site, owing to its marshy nature, have been overcome by erecting the stand on a large concrete raft, which extends all over the site covered by the building; the raft is nearly 2 ft. thick, reinforced with expanded metal and rolled steel joists.

ROYAL MUSIC HALL, HIGH HOLBORN.—The Royal (formerly Weston's) Music Hall, High Holborn, is being entirely reconstructed by Messrs. Kirk & Kirk, contractors, under the directions and superintendence of Messrs. Frank Matcham & Co.

WORKHOUSE EXTENSION, MILE END.—The additions which have been made to the workhouse at Mile End have just been opened. The work has been carried out by Mr. W. Barker, builder, from plans prepared by Mr. J. M. Knight, architect, at a cost of 12,396*l*.

HYDRO, TORQUAY.—The Villa Syracusa, at Torquay, has been converted into a hydro after being enlarged and improved. The work, which included the erection of a new wing, has been carried out by Messrs. R. F. Yeo & Sons. The decorations have been executed by Messrs. Parker & Sons and Mr. W. Cole Watson. Radiators heat the principal rooms and the corridors. A 14 horse-power boiler fixed on the garden level and steam calorifiers, have been supplied and fixed by Messrs. Beynon & Son, who have also provided a complete system of electric bells and speaking tubes. The hydro is lit throughout by electricity. The installation is the work of Mr. T. L. Harding. The architects were Messrs. Johnson & Webber.

APPOINTMENTS.

NEWCASTLE-ON-TYNE.—A meeting of the Special Committee of Newcastle Corporation to go through the list of applicants for the post of City Engineer was held on the 11th inst. There were upwards of sixty applications, and the following seven were selected to be submitted to the City Council for their final selection:—Messrs. K. T. Campbell, Huddersfield; A. E. Collins, Norwich; A. D. Greatorex, West Bromwich; C. R. S. Kirkpatrick, Newcastle; James Paton, Plymouth; W. J. Steele, Bristol, and F. Wood, Fulham.

LEEDS CITY ENGINEERSHIP.—The Improvements Committee of the Leeds Corporation, which met on the 15th inst. under the presidency of Mr. Pickersgill, had under consideration the applications for the position of city engineer, for which a salary of 600*l*. per annum is offered. The number of applications was ninety-seven. The Committee selected the following six candidates, who will be asked to appear before the Committee:—Mr. Thomas Hewson, jun., deputy city engineer, Leeds; Mr. E. B. Martin, unhealthy areas engineer, Leeds; Mr. A. D. Greatorex, borough engineer, West Bromwich; Mr. Robert J. Angel, borough engineer, Bermondsey, S.E.; Mr. W. J. Steele, deputy city engineer, Bristol; Mr. W. T. Lancashire, deputy city engineer, Sheffield.

SANITARY AND ENGINEERING NEWS.

LITTLETON BRIDGE, MANCHESTER.—This new bridge over the river Irwell was opened and dedicated to the public use on the 9th inst. by the Mayor of Salford. It is constructed of Runcorn stone, with Portland stone dressings, and spans the river with four arches. The engineer is Mr. L. B. Wells, and the cost is 11,000*l*.

FOREIGN.

FRANCE.—A new asylum for the aged is to be built at Villejuif, in the Department of the Seine.——The municipality of St. Germain intend to rebuild their theatre. Unless there is open competition decided on, the work will be carried out by M. Henri Choret, the city architect. The cost is estimated at 280,000 francs.——The jury in the competition for a new savings bank at Vilry-le-François have awarded the first premium to M. Jossier, of Châlous-sur-Marne.——The Municipal Council of Lille have voted 209,000 francs for the construction of a campanile, with a carillon, in connexion with the Palais du Commerce.——A new Hôtel de Sous-Préfeture is to be built at Bêthune.——The jury in the competition for a new Prefecture at Agen have awarded the first premium to M. Payen, of that town.——Works to the extent of nearly 450,000 francs are to be undertaken shortly for the enlargement of the railway station at St. Malo.——A competition is to be opened for the building of a new hospital at Perpignan.——The completion of the inner port at l'Agha (Algeria) is to be proceeded with, at a cost of about 8,000,000 francs; and a sum of nearly 18,000,000 francs is to be expended on the enlargement of the port of Oran.——M. Louis Bernier has been appointed chief professor in the atelier of architecture at the Ecole des Beaux-Arts, in place of the late M. Scellier de Gisors.——The new post and telegraph office at Vichy has been officially opened.——A competition is advertised for a new hospital at Saint-Dizier.——The municipal council of Marseilles has voted a sum of six million francs towards the construction of a canal from Marseilles to the Rhône.——A new post and telegraph office is to be built at Orange.——At Paris important operations are shortly to be undertaken with the object of enlarging the Halles and improving the approaches to them. The Rue Berger is in the first place to be prolonged on the side of the Rue du Louvre, whence it will be continued by an enlargement of the Rue des Prouvaires. At the same time a sanitary improvement is to be carried out in the block of old houses comprised between Rue Pirouette and Rue Mondétour.——The works have been commenced for the rebuilding of the Hospital "de la Piété," which was founded in 1613, and is now in a very dilapidated condition. The new hospital will be built in the large gardens of the Salpêtrière.——The Gobelins manufactory are

occupied with four tapestries, from Cartoons by M. Toudouze, intended for the decoration of the Palais de Justice at Rennes. The subjects are—The Marriage of Anne of Brittany; Jeanne Darc and the Connétable de Richemont; the death of Duguesclin; and the crowning of Nominoé, first King of Brittany.——The Conseil d'Etat has authorised the Government to accept the legacy left by M. Léon Dru of the historic château of Vez, and the splendid collection of works of art which it contains. The château will be, according to the will of the testator, classed among the "Monuments Historiques," and is to be opened to the public on at least three days in the week. ——The Société des Artistes Français has under consideration the establishment of a "Maison de Retraite" for painters, sculptors, architects, and engravers. The cost of the proposed building is estimated at a million francs.——An "Ecole des Musées" is to be created at Paris, with the object of educating and preparing candidates for filling the office of Curator in national museums in Paris and in the provinces.——The death is announced, at Paris, of Camut, Government architect, and architect also to the office of "Administration de l'Enregistrement et des Domains." He was a member of the Société Centrale des Architectes, and a Chevalier of the Legion of Honour.

GERMANY.—The Cathedral at Bamberg is to be restored under the direction of Dr. Fritz Trangoth Schulz, of the Germanic Museum, Nürnberg.——A new concert hall is to be built at Frankfort, which will accommodate 25,000 persons, and the building of which will cost about 5,000,000 francs; this will be the largest hall of the kind in Germany.——The Society of German Architects and Engineers will meet at Heilbronn shortly.——An historical exhibition of clocks took place in July at Nürnberg, on which occasion the statue of Peter Henlein, the inventor of the first pocket watch, was unveiled.——The new "Maximilian" Bridge at Munich was opened in June; the bridge was built by the firm of Sager & Wörner, at a cost of 1,000,000 marks.——A memorial to the poet Gottfried Schwab has been executed by Professor Ludwig Schwab and erected in Darmstadt.——A new Court Theatre is to be built at Weimar by the firm Heilmann & Littmann, on the site of the old theatre.

AUSTRIA.—In the competition for designs for a kursaal and baths to be erected at Teplitz Schönau, the first premium, of 4,000 krons each, was awarded to Herr Gustav Jirsch, Herr Edmund Armin, and Herr Marzell Kammerer.——The large tower of the Church of St. Maurice, at Olmütz, is to be restored; plans are being designed for this by Professor Hauberisser, of Munich.——A new evangelical church is to be built in Vienna at a cost of more than 150,000 krons.

SWITZERLAND.—The Art Gallery at Zurich is to be rebuilt from plans by the architect, Herr Karl Moser, at a cost of 1,000,000 francs.——New schools are to be built at Arbon by the firm of Ott & Keller, at a cost of 270,000 francs.

SOUTH AFRICA.—Speaking at the meeting of the Master Builders' Association in Pretoria, the Mayor said that the municipality was about to enter on large public works, including surface drainage and permanent water schemes, plans for which were complete.——Official figures show that considerable building is still in progress in Johannesburg. For the quarter just ended plans were passed for 2,002 buildings, representing a value of 690,402*l*. Since January last plans have been approved for 10,765 separate buildings, representing a total value of 3,371,196*l*.——A new township is to be laid out at Embabaan in Swazieland.——The Mayor of Kroonstad has been authorised to sign an agreement with Mr. E. G. White, of Port Elizabeth, for the erection of the local Town Hall, at a cost of 9,540*l*. 19s.——The central portion of the Boksburg Public Library is nearly finished. The building is in the old Dutch style. Mr. Fowle is the contractor, and Mr. P. S. Stewart the architect.——New buildings about to be erected include the Victoria Memorial Cottage, in King Williamstown, a boys' school at Ladysmith, Natal, and Government offices at Livingstone, Rhodesia. ——The new German Club in Johannesburg has been handed over by the contractors, Messrs. Schluter & Doerig. The building is a two-storied one, and has been erected on three stands at a cost of about 11,500*l*., exclusive of the value of the stands. It has been built from the designs of Mr. Theophile Schaerer. ——During July the Cape Town City Council passed twenty-nine building plans, the carrying out of which will involve the expenditure of 71,000*l*. ——A dispute has arisen in Pretoria between the master builders and the carpenters consequent on the former having served a notice of reduction of wages to 2s. 6d. per hour. A fortnight's notice to this effect was given some time ago, and the masters maintain that the new rate is now in force owing to the failure of the carpenters to arrange for the appointment of an arbitration board, which it was understood would be done when the notice was first given. The men deny any failure on their part to keep this undertaking, and a mass meeting is being called to consider the situation.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENT.—Mr. James Patteson, of the Marble, Granite, &c., Works, Oxford-street, Manchester, has acquired his late brother's interest in the firm of Messrs. J. & H. Patteson, and has opened an office and showroom at 7, Bayley-street, Bedford-square, London, W.C.

CHOIR STALLS, THORNEY ABBEY, CAMBS.—New choir stalls have been presented to the old Abbey church by His Grace the Duke of Bedford, K.G., and were used for the first time on the 16th ult. They were executed by Messrs. Jno. Thompson & Co., of Peterborough, from designs prepared by Mr. J. C. Traylen, of Stamford.

OPEN SPACES.—Mr. Cameron Corbett, M.P., has informed the Corporation of Glasgow that he will present to the City three of the farm situated between Loch Goil and Loch Long, covering about 9,000 acres in all, and distant about thirty-five miles from Glasgow. The property will be preserved in its natural state, and the income derived therefrom is to be applied in rendering it more accessible to the townsfolk. —Miss Octavia Hill, in appealing for contributions towards the acquisition by the National Trust of the beautiful tract of land on the Lake of Ullswater, states that of the sum of 12,000*l*. which is required to complete the purchase the amount already obtained is now 7,775*l*.——On August 7 was dedicated to the public an open space known as Mountsfield, consisting of thirteen acres, at Hither Green, Lewisham, which have been secured by the joint efforts of the Borough of Lewisham and the London County Council, and have been laid out, at an expenditure of 3,115*l*., by Colonel Sexby, chief officer of the Parks Department, L.C.C.——On August 5 was opened Springfield Park, Upper Clapton, consisting of thirty-two acres, with an island in the river Lea, which have been bought from Mr. T. K. Bros, the owner of the estate (who subscribed 1,000*l*.), at a total outlay of some 40,000*l*., contributed by the London County Council (20,000*l*.), the Hackney Borough Council (15,000*l*.), the Bethnal Green Borough Council (250*l*.), the Stoke Newington Borough Council (1,000*l*.), and private subscribers. The park has many natural beauties, is well timbered, and presents a fine prospect of the Lea valley. Up to the present time an aggregate of 1,923 acres have been secured to the public and vested in the London County Council since they were first appointed.——One Tree Hill, Peckham Rye, was opened on August 7, after an agitation for its acquisition which began nine years ago. The land has been bought by the Camberwell Borough Council for 6,100*l*., upon terms of compulsory sale, the owner having at the outset offered to sell the land for 16,000*l*.

ECCLESIASTICAL PROPERTIES.—Orders in Council have been made for giving effect to recommendations framed by the Ecclesiastical Commissioners to apply 15,000*l*. out of the proceeds of the sale of Addington Park, Surrey, to the purchase and upkeep of a suitable and convenient residence for the Bishop of Rochester; and to appropriate the present Bishop's House, Kennington, for uses of the Bishop of Southwark. Addington Park, a residence of the Archbishops of Canterbury, was sold three years ago for 45,000*l*., and a further amount of 2,371*l*. was paid to the Ecclesiastical Commissioners by the Archbishop in respect of dilapidations which had accrued before the sale. The total net proceeds realised by the Commissioners amounted to 46,007*l*., through the discharge of a small mortgage created in respect of some structural improvements at Addington. The new archiepiscopal palace and its site at Canterbury have cost 29,176*l*. 11s. 1d. The old episcopal palace at Rochester has of late years been sub-divided into private houses, and the Bishop of Rochester has occupied the house in Kennington Park-road, S.E.

BIRMINGHAM'S ANCIENT WELLS.—Considerable interest attaches to the discovery of an ancient well in Birmingham, says Mr. Joseph Hill, the well-known antiquarian, and yet within the memory of persons still living the whole water supply of the town was derived from wells, and Edgbaston-street, St. Martin's-lane, Digbeth, Park-street, Moor-street, and the Bull Ring, or Corn Cheaping, were all honeycombed with wells. In some parts wells existed in the cellars, whilst in the streets, notably around St. Martin's Church and Ladywell, pumps were set up for the free use of the public. In fact, the proper name of the church end of Digbeth was Well-street. The Cock well, which was near the Cock Tavern in this Well-street, must have been of great antiquity. Another public well, probably as ancient, was discovered when the old Lamb House at the bottom of Crooked-lane (known as Suffield's) was destroyed some dozen years ago. The great stones of this well, like those at the Old Crown House, unearthed some fifty years since, were the work of a very early date. The public well in Lamb-yard was known to our forefathers as the well at the Welsh End, and was maintained at the public expense; as also was another, probably still more ancient, near the Swan Tavern in New-street, behind the public toll-booth. This last-named well was undoubtedly the origin of the thoroughfare, which has been called New-street since the days of Richard II., when the former and very old by-road or pathway was dignified by being made into a street, and the Guildhall was built in it. But the well remained as a public well until the end of the XVIIIth century, and, curiously enough, still remains under the footpath; it was laid bare a few years since, and again covered over. It is not surprising that many old wells have been discovered of late years, but the one in Bennett's-hill has a greater interest on account of its age than any found for some years. The one at the back of the Old Royal Hotel, for instance, was younger by nearly a century, for the one under notice was, there is small doubt, made in 1680, when Colmore-row was New Hall-lane and New Hall itself was a comparatively modern mansion.—*Birmingham Mail.*

FINLAND TIMBER SUPPLY.—Reporting on the trade of the Grand Duchy of Finland for the year 1904, Mr. Consul Cooke points out that, whilst Finland is not blessed with coal, iron, or other metals to any appreciable extent, the vast expanse of her Government forests—more especially in the far north—only requires to be more generally known to be better utilised, the more so as these timber supplies are of a very slow growth, many of the trees being of a great age. They are sure of being carefully husbanded, so that the supply of trees, it can safely be said, will last for centuries, whereas the forests in private hands seem rapidly to be disappearing. The spread of population, too, is a powerful factor in lessening the timber supply, as vast tracts of land are annually brought into cultivation. The exports from Finland chiefly consist of timber of various kinds (from 45 to 60 per cent.), dairy produce, wood-pulp, paper, and cardboard. It is an obvious disadvantage for Finland that one article, *i.e.*, timber, has such an influence on the foreign trade, the more so as its prices often vary considerably. The spring of 1904 showed good prices for timber, whereas in the autumn prices fell, causing a corresponding decrease towards the end of the year. For instance, the price per cubic metre for battens fell 4s. and for planks 8s. from 1903 to 1904. The quantity of timber exported in 1904 was as follows, in cubic metres: —Masts, spars, etc., 221,121; props, 1,591,968; paper-wood, 633,702; rafters, 123,519; sleepers, 60,840; laths, 108,682; firewood, 1,149,189; planks, 340,266; battens, 847,348; boards, 1,245,167; deal ends, 149,005. Owing to the South African market being overstocked, a great fall in the larger deal sizes occurred and still continues. In spite of this large export, the low prices have reduced the value of the whole by about 340,000*l*., *i.e.*, 4,900,000*l*. in 1904 against 5,240,000*l*. in 1903 and 4,640,000*l*. in 1902. The export values of the most important kinds of timber in 1904 were:—Masts, spars, etc., 132,680*l*.; props, 429,840*l*.; paper-wood, 189,120*l*.; fir wood, 48,520*l*.; birch wood, 79,680*l*.; rafters, 111,160*l*.; laths, 43,480*l*.; planks, 612,480*l*.; battens, 1,186,280*l*.; boards, 1,593,800*l*.; deal ends, 53,640*l*. The largest reduction of value was in sawn goods.

GLASS BRICKS AND TILES.—In previous issues* we have referred to the use of glass bricks for the internal partitions of a hospital building and in the construction of pavement lights for an apartment house. It may interest our readers to know that bricks and tiles of glass are being made under the Garchey patents, and extensively employed in several continental countries. In France tiles have been used for the walls, floors, and stairways of various stations on the Paris Metropolitan Railway, but on stairs they seem to become too slippery to be safe. Two streets in Paris have been paved with similar bricks laid on concrete, but these bricks do not wear so well as stone. Part of the Rue de la Republique, at Lyons, was paved with glass tiles in 1898. In Germany glass bricks are occasionally employed in building construction; they are made for dovetailed joints, so that very little cement is required. In Holland opaque bricks are used for ordinary building purposes, and transparent bricks for the walls of workshops, conservatories, and other strutcures where light is a desideratum. In the manufacture of the bricks, molten glass is granulated by being thrown into cold water; it is then placed in moulds, heated until plastic, and shaped by hydraulic pressure, the bricks being cooled in ovens of special construction.

THE ESHOLT ARBITRATION.—Arbitration proceedings were commenced at the Surveyors' Institution, London, on the 7th inst., between the Bradford Corporation and the Misses Stansfield and Mrs. McCall, from whom the former is taking 1,700 acres of land in Yeadon, Rawdon, Idle, Eccleshill, and Guiseley, for the purposes of outfall works for the city sewage. The property includes also twenty houses, eighty cottages, forty farms, and two public-houses. Sir John Rolleston, M.P., was the umpire, and Mr. Walter Middleton was arbitrator for the claimants, and Mr. Chas. Gott for the Corporation of Bradford. The total claim has been variously stated as between 350,000*l*. and 380,000*l*. The counsel for

* Vol. lxxxviii., pp. 355 and 184.

the claimants were Mr. Tindal Atkinson, K.C., Mr. Honoratus Lloyd, K.C., and Mr. Longstaffe; and the Corporation of Bradford were represented by Mr. Balfour Browne, K.C., Mr. Waugh, K.C., and Mr. Jeeves.

Legal.

ROBERTS AND ANOTHER *v.* STYTHE.

APPENDED is the full judgment of the Court of Appeal (briefly reported in our last week's issue) on the appeal of the plaintiffs, a firm of builders, from an order of the judge in chambers affirming the order of the Master and staying the action on the ground that there was an arbitration clause in the contract between the plaintiffs and the defendant, the building owner, referring all disputes to the architect, Mr. Rowland Lloyd Jones.

The Master of the Rolls, in giving judgment, said the contract provided that all matters arising under it were to be dealt with by the architect, and there was also a provision which enabled the parties to refer any matters in dispute to the architect, who was to be the judge between them. Up to this point the contract had been carried out, and they had, therefore, deliberately elected to have him for their arbitrator during the course of the execution of the contract upon the very matters in connexion with which he was afterwards invited to deal as arbitrator. As very frequently arose under these contracts, certain questions had become the subject matter of discussion because the two posts of architect and arbitrator were posts that were incompatible. It was a principle of our law that a man could not sit in judgment upon his own cause. But the parties here had deliberately elected that the person who was concerned in these matters should also be the person to be chosen as arbitrator, and they could not now take an exception to his exercising that function because of his being employed in two capacities. It had been laid down by the late Lord Justice Bowen that they were not to expect the icy impartiality of a Rhadamanthus in such a case. Therefore in this case, knowing full well that the architect was acting in a double capacity, the plaintiffs agreed by the contract to abide by the decision of the particular arbitrator, sought to set it aside by throwing mud at the architect and seeking to asperse his character. A more reckless charge he had never himself seen in an affidavit. The plaintiffs had not scrupled to charge the architect with fraud and collusion with the building owner, and when they gave the basis on which the charge might be founded, the Court found there was practically no shadow of foundation for it. It rested simply upon "I am informed and believe," and when they came to examine the matter of the information and belief it resolved itself into one of two matters which were capable of explanation and which had been explained fully and to the satisfaction of the Court by the architect. First of all, the builders relied upon the fact that in the course of the contract, as not uncommonly happened, they were in need of money, and they wanted some assurance from the architect as to what would be the money due to them upon the execution of the contract, and they wanted that assurance in order that they might borrow money from the bank. Accordingly, Mr. Roberts saw the architect in the circumstances which had been described to the Court by the architect himself, supported by his clerk, as to what actually happened on that occasion. It would have been wiser if the architect had acted differently, but the result was that the architect, without making an exact examination of the time and labour and the precise conditions of the account, formed a rough estimate, which turned out to be wrong, in which he came to the conclusion that a much larger sum would be payable to the builders as the result of the execution of the work than was in fact the case. The architect wrote a letter indicating that something like 300*l.* for extras might be due to the builders. But supposing he had done all that, what effect would it have, or be likely to have, on the mind of the architect when he afterwards came to look into the matter?

It appeared to his lordship that it would have been much more likely to have had this effect, that the architect would have desired to bring out his decision as justifying the previous estimate he had given. But what had he done in point of fact? On going into the figures he found that nothing like what he thought would become due was in fact due. In fact, he had had to admit that the previous estimate was incorrect, subject to the explanation that he had not taken sufficient time to investigate and find out what it was before he committed himself to the opinion he had given. What effect had that on the question before the Court? It indicated nothing like fraud or collusion on the part of the architect. He had honestly changed his opinion, the opinion which he had expressed before, and he explained the reasons why he did so. So far from that being anything like evidence of fraud or dishonesty, it was evidence strongly in favour of the architect's impartiality. In the next case it was said, in regard to the footings, the case showed fraud, or misconduct, or collusion, or something of that kind. What were the circumstances? There appeared to be a discrepancy between the dimensions named in the specifications and the dimensions on the plans. The builders had contracted on the specifications to make footings of much larger depth. They were relieved by the architect from making them of that depth, and made them of very much smaller dimensions, and in that view the architect, looking at that fact, made a deduction by reason of the fact of footings of the smaller depth being used, and gave the defendant the benefit of that deduction. He thought the evidence showed that there was no foundation for the suggestion that he had done that improperly. And yet, absolutely, the plaintiffs had the effrontery, on a suggestion of that kind, to found an imputation of fraud and collusion against the architect. Again, there was a suggestion that the architect, although he had taken up a position contrary to the building owner's view and in favour of the builders to a certain extent, was pressed by threats, and even intimidation, in the shape of threats of litigation, to give way to the building owner in order to curry favour with him, and had pressure put upon him to decide adversely to the builders. What did all that come to? To his mind, a complete and satisfactory denial was given on the part of the architect to anything of that sort. There was just a sufficient shadow of foundation, which explained how the change came about. The building owner was pressing for the completion of the contract. He was dissatisfied with the fact that it was dragging on, and consulted a solicitor to see what pressure could, through the architect, be put upon the builders to hurry on the completion of the work. The result was that he saw the architect, and the latter pushed the thing on as well as he could. That was the whole foundation for the charge of undue influence brought to bear on the architect by pressure of threats or litigation. In his opinion there was no shadow of foundation for the imputations on the architect in this case, and therefore the appeal must be dismissed with costs.

Lord Justice Romer said he was also satisfied on the evidence that there was no ground whatever for the accusations brought by the plaintiffs against the architect. He regretted to be obliged to say that, in his opinion, the charges against the architect were brought by the plaintiffs most recklessly, and, in his opinion, merely with the object of trying to defeat the application by the defendant that the matters in dispute between the plaintiffs and him should be referred to arbitration, as agreed to in the contract between the parties. He desired to say that, in his opinion, no shadow of ground whatever had been shown to justify any charge of misconduct against the arbitrator of any kind whatever, or against his character. Nothing had been shown which would justify that Court in refusing to refer the matters in dispute between the plaintiffs and the defendant to the arbitration of this gentleman, the architect, according to the agreement. There was no ground, to his mind, shown to justify the appeal, and he thought it should be dismissed with costs.

The appeal was accordingly dismissed, with costs.

SOUTHEND BUILDING DISPUTE.

THE case of Dowsett *v.* Ramuz came before Mr. Justice Phillimore in the King's Bench Division last week—an action by the plaintiff for an injunction to restrain the defendant from building in Victoria-avenue, Southend-on-Sea, beyond the building line mentioned in a deed of conveyance, dated October 26, 1878, and in alleged breach of covenants contained therein.

The defence was a denial that the plaintiff was entitled to an injunction.

The plaintiff's case was that on October 26, 1878, certain property, part of the Milton Hall estate, Southend-on-Sea, was conveyed to a Mr. Hudson, the conveyance containing a covenant by the purchaser that no buildings should be erected on the land conveyed between the building line 35 ft. from the road and the roadway shown on the plan, except fences. Hudson subsequently erected a house, called Eton House, upon the land, the main part of which stood back 35 ft. 6 in. on each side of the bays and the bays 32 ft. 5 in. from the road. In 1881 the plaintiff built a house on the adjoining piece of land, the frontage being the same distance from the road. The plaintiff alleged that it was the custom at Southend to permit owners to bring forward their bay windows slightly beyond the stipulated building line. The defendant in 1904 purchased Eton House, and purported to convert the house on the ground floor into shops, and deposited plans, which were passed, showing that the building line of the house would be brought forward to 32 ft. 4¼ in. from the road. The plaintiff's case was that this would be prejudicial to all the other purchasers who had bought on the same conditions.

On behalf of the defendant, it was argued that Hudson bought the land on which his house was erected on the footing that there was a building line, and when the plaintiff broke the stipulation he deprived Hudson of the benefit stipulated for. It was also contended that there was no case in the books where a plaintiff was held to be entitled to enforce a covenant which he had himself broken.

In the result his lordship, in giving judgment, said the defendant's house was the first to be built, and the bay windows were infringements of the building line. The plaintiff then built, and had infringed by building bay windows. That fact prevented the plaintiff from compelling the defendant to pull down the bay windows, but it did not entitle the defendant further to infringe the building line. If the defendant's infringement was an equivalent to that of the plaintiff's the plaintiff could not recover. In this case the plaintiff and defendant had been equal sinners, and the defendant proposed to add to his breach in the same way as he had already committed a breach. Upon the whole, he thought it was not only an excess, but so great an excess that it ought to be restrained. He accordingly granted an injunction restraining the defendant from building as shown in the plans deposited by him with the Town Council and passed by them.

Mr. Acland, K.C., and Mr. C. Herbert Smith appeared for the plaintiff; and Mr. W. H. Upjohn, K.C., and Mr. Edward Ford for the defendant.

CASE UNDER THE PUBLIC HEALTH ACT.

THE case of Rippin *v.* The Isle of Thanet Rural District Council came before a Divisional Court of King's Bench, composed of the Lord Chief Justice and Justices Lawrance and Ridley, on the 4th inst., on the appeal of Mr. A. J. Rippin against a decision of the justices of Margate. The case came before the Court in the form of a special case.

The case stated that a complaint was preferred by the Council against Mr. Rippin, auctioneer, of No. 33, Cheapside, Mr. F. H. Rake, and Messrs. Rippin & Rake, Limited, that they, being persons who intended to lay out a street on the Park estate, Birchington-on-Sea, to be known as Brunswick-road, had failed to give to the Council notice in writing of such intention, or to forward plans and sections to the Council's surveyors, contrary to by-law 91 (with respect to new streets and buildings), and contrary to the provisions of the Public Health Act, 1875. At the hearing Mr. Rake and Messrs. Rippin & Rake were dismissed from the complaint, and the summons was only pressed against the appellant. On his behalf it was contended that the summons was bad in law, but the justices held that the case must proceed as against him. The justices after hearing the case found that an offence had been committed by the appellant under the by-law, but that the appellant had since complied with it, and they imposed a fine of 2*l.* and costs for such breach. The questions for the opinion of the Court were—(1) Whether under the circumstances the justices were right in hearing the complaint against the appellant, after the respondents had decided to offer no evidence against Mr. Rake and Messrs. Rippin & Rake, Limited, and they had accordingly dismissed the case against them; (2) whether by-law 91 applied to a street as distinguished from a new street; (3) whether the road was a street or new street within the meaning of the Public Health Act, 1875, and by-law 91 of the Council; (4) whether there was any evidence of any intention to lay out a street or new street; (5) whether the justices were right in deciding that the work done on the road immediately prior to the information amounted to evidence of an intention to lay out the road at that time; and (6) whether the complaint was not barred under Section 11 of the Summary Jurisdiction Act.

Mr. R. W. Turner appeared for the appellant, and Mr. Thorn Drury for the respondents.

Mr. Turner argued that the by-law applied only to new streets, that it was *ultra vires*, that the road was not a street or new street within the meaning of the by-law, and that there was no evidence of any intention to lay out a new street.

In the result their lordships, without calling upon counsel for the respondents, affirmed the decision of the justices, and dismissed the appeal with costs.

ACTION AGAINST LANDLORD FOR DEFECTIVE FLOORING.

JUDGMENT was given in the Court of Appeal, composed of the Master of the Rolls and Lords Justices Romer and Mathew, on the 10th inst., in the case of Cavalier and another *v.* Pope, on the application of the defendant for judgment or alternatively for a new trial or appeal from verdict and judgment at trial before Mr. Justice Phillimore and a common jury in the King's Bench Division.

The action was brought by Mr. and Mrs. Cavalier to recover damages from the defendant for personal injuries sustained by Mrs. Cavalier owing to the omission of the defendant's agent to carry out an agreement to do certain repairs in a house known as 18, Bridport-place, Hoxton, of which Mr. Cavalier was tenant to the defendant. Mr. Cavalier also claimed from the defendant the

expenses he had incurred in consequence of the accident to Mrs. Cavalier.

The facts of the case were as follows:—Mr. Cavalier, in December, 1901, entered into a verbal agreement with the defendant's agent for the tenancy of three rooms in the house in question at a monthly rent. The plaintiffs during the tenancy repeatedly called the agent's attention to the fact that the kitchen floor required repairing, and on December 9, 1902, the agent (according to the plaintiffs' case) agreed to do the necessary repairs if Mr. Cavalier stayed on as tenant. The repairs, however, were not carried out, and on October 21, 1903, while Mrs. Cavalier was standing on a chair in the kitchen, the back legs of the chair went through the floor, and the result was that Mrs. Cavalier was thrown to the ground and sustained serious injuries. At the trial the jury found, in answer to specific questions left to them by the learned judge, that the agent had notice or knowledge that the kitchen floor was in a defective state; that the agent promised to repair it; and that in so doing he was acting within the scope of his authority. They assessed the damages at 75*l.* for the wife and 25*l.* for the husband, and judgment was entered accordingly with costs, Mr. Justice Phillimore holding that the wife was entitled to recover because, although the defendant was not liable to her in contract, he was liable to her in tort. The defendant now moved for judgment against the wife, or, in the alternative, for a new trial.

The Master of the Rolls and Lord Justice Romer held that as Mrs. Cavalier had no contract with the defendant on which she could sue, to succeed she must establish that her injury was caused by the defendant's neglect of some private duty he owed towards her in reference to the dilapidated condition of the flooring. In their opinion the agreement to repair did not bring the landlord within that class of case where the owner or occupier of dangerous premises was held liable for inviting an unsuspecting guest or stranger to come upon the premises. The contract with Mr. Cavalier to repair could not create a special private duty on the part of the landlord to the wife, which would have had no existence in the absence of the contract. If any invitation to the wife could be implied at all, it was an invitation by the husband, which the wife accepted, knowing all the facts. Their lordships thought, therefore, that the appeal should be allowed, and judgment entered for the defendant as against Mrs. Cavalier.

Lord Justice Mathew dissented. He thought that Mrs. Cavalier was entitled to a remedy at law for the injury she had sustained. It was true that the plaintiffs knew of the condition of the premises, but they did not willingly incur the risk to which they were exposed by the conduct of the landlord. He thought that the decision in the case of "Langridge *v.* Levy" was an authority for the position taken on behalf of the wife.

By a majority, therefore, the appeal was allowed, and judgment entered for the defendant as against the wife, with costs.

Mr. Montague Lush, K.C., and Mr. Lilley appeared for the appellant; and Mr. Wilshere for the respondents.

HAMPSTEAD PAVING APPORTIONMENT DISPUTE.

MR. JUSTICE JOYCE, in the Chancery Division on the 11th inst., delivered a considered judgment in the case of Elsdon *v.* the Mayor, etc., of Hampstead, an action by the plaintiff, the owner of certain houses abutting upon Gondar-gardens, Hampstead, for a declaration that an apportionment by the defendants, dated April 14, 1904, was invalid.

The material facts of the case were shortly as follows:—On the west side of Gondar-gardens (which was a new street), about 200 yds. away, was land belonging to the trustees of one Cotton, deceased. On this land houses were erected fronting upon the Sarre-road, and which had gardens running down to Gondar-gardens, from which they were separated by a fence. On October 10, 1901, the defendants, acting under their statutory powers, passed a resolution that a portion of Gondar-gardens should be paved, and that the estimated expenses should be apportioned to and charged upon the owners of the houses and premises abutting on such portion as mentioned in the resolution, including all the houses fronting on Sarre-road, the apportionment being at the rate of 1*l.* 3s. per ft. of frontage. The defendants rescinded that resolution and apportionment on March 3, 1904, and on April 14, 1904, passed a fresh resolution apportioning the expenses among the owners of the houses and land abutting on the portion paved, but excluding from the apportionment the owners of the houses fronting Sarre-road, and purporting to apportion the nominal sum of 10s. in regard to the strip of land on which stood the fence which separated the Sarre-road premises from Gondar-gardens. The result of the later apportionment was to increase the amount payable by the plaintiff and the remaining owners to 1*l.* 18s. per foot frontage, and the present action was accordingly commenced.

The defence was that the apportionment of April 14, 1904, properly apportioned the expenses.

Mr. Justice Joyce, in giving judgment, said that no one questioned that if an apportionment made by the authority were determined to be invalid a fresh one could be made. The new apportionment omitted all mention of the houses in the Sarre-road and inserted instead "land upon which old fence stands," purporting to charge the owners or owner of the land, whatever it might be, so referred to with the nominal sum of 10s. The difference between this and the aggregate sum of more than 500*l.* charged by the original apportionment on the houses in Sarre-road was thus thrown upon the owners of the houses in Gondar-gardens, some of which belonged to the plaintiff, who naturally objected to have the assessment upon his property materially increased in that manner. Upon investigation, he was satisfied that there was no foundation in fact for the theory that the gardens or grounds of the houses in Sarre-road were cut off from the new street, Gondar-gardens, by any intervening strip of land whatsoever belonging to any person other than the owners of the houses in Sarre-road. He found as a fact that if the houses in Sarre-road were not houses forming the new street, still the lands of the Cotton trustees demised to the lessees of the houses in Sarre-road did, within the meaning of the term in the statute, bound or abut upon the new street, and so were liable to have, and ought to have, some portion of the expenses of the paving apportioned upon them in common with the other owners in the new street. If the properties of the lessees in Sarre-road abutted upon the new street, as in his opinion they did, some portion of the expense must be apportioned upon them. In his opinion, the last apportionment was illegal and invalid, and he made a declaration to that effect. If the defendants sought to enforce the apportionment the plaintiff would have liberty to apply for an injunction.

Judgment was accordingly entered for the plaintiff, with costs.

Mr. Younger, K.C., and Mr. Martelli appeared for the plaintiff; and Mr. Macmorran, K.C., and Mr. Courthorpe-Munroe for the defendants.

LIMITATION OF POWERS OF A DISTRICT COUNCIL.

IN the Chancery Division, on the 11th inst., Mr. Justice Farwell concluded the hearing of the case of the Attorney-General *v.* the Pontypridd Urban District Council.

The action was brought by the Attorney-General, at the relation of the present trustees of the Baroness Llanover, deceased, against the defendants to restrain them, their contractors, servants, and workmen, from erecting or permitting to remain upon any portion of the land at Gwernygerwn, Treforest, near Pontypridd, which was purchased from the trustees in 1902, any building or works not required or intended for the purposes of the defendants' electric lighting undertaking, and from permanently using the land, or any part of it, for any other purpose than that for which it was acquired, viz., the production and supply of electricity. The relator trustees, on their own behalf, claimed an injunction to restrain the defendants from using any part of the land or any building on it in such a manner as to create a nuisance or cause damage to the Llanover estate.

It appeared that after the purchase of the land the defendants, in April, 1903, applied to the Local Government Board for permission to use a part of the land for the purpose of a refuse destructor, but were told that the Board had no power to sanction the use of the land for any other purpose than that for which it had been acquired. In the following April the trustees were applied to to accept a re-conveyance of the part of the land on which it was proposed to erect the destructor and then to convey it back again to the defendants, the latter paying the costs, but the trustees declined to entertain the application. Failing in both quarters, the defendants went through the form of conveying this part of the land to a Mr. Davis and taking a re-conveyance from him, the undertaking to re-convey being a condition of the conveyance to Davis, and although informed by the trustees that they objected to the refuse destructor being built there, the defendants had commenced the construction of the destructor, although no sanction had been obtained for it from the Local Government Board.

The trustees' view was that the destruction of dust and refuse on any portion of the land in question would cause a serious nuisance, and would materially diminish the value of the trust property in the neighbourhood, which was being developed for building.

The nature of the defence was that the scheme of the Council for establishing their works for generating electrical energy included a scheme which was not uncommon in practice for utilising the heat derived from a refuse destructor for working the electric generating machinery. This plan they had, for reasons of economy, adopted as long ago as 1901, on the advice of their electrical engineer.

In the result his lordship, in giving judgment, said that the proposition put forward by the defence, that the defendants had the powers of user over the land as suggested, was of a very wide-reaching nature, and it was entirely contrary to the powers given to the Council in regard to the supply of electricity. He could not apply that principle to the present case. Defendants acquired powers to take land for the purpose of supplying electricity. Under the order their powers were for the supply of electricity and nothing else. Subsequently the defendants had powers under the Public Health Act, and they now sought to set up a dust destructor on the land. The first question he had to decide was whether the land was acquired under the Electric Lighting Act or under the Public Health Act. In his opinion it was under the Electric Lighting Act, and for the purpose of electric lighting only. Defendants had powers under the Public Health Act to erect a dust destructor. Could the dust destructor be erected on the land in question? To his mind it would be a dangerous precedent to create if he gave the defendants the powers they asked for, and it would be contrary to all the decisions on record. The powers obtained by the defendants must be treated as given separately. He was therefore constrained to say that the action of the defendants was *ultra vires*. The injunction would be granted, with costs.

Mr. W. H. Upjohn, K.C., and Mr. Hornell appeared for the Attorney-General; and Mr. Danckwerts, K.C., and Mr. R. J. Parker for the defendants.

PATENTS OF THE WEEK.*

APPLICATIONS PUBLISHED.

18,837 of 1904.—S. SAUNDERS: *Means for Drying Bricks, Tiles, and the like.*

This relates to means for sheltering bricks from rain. According to the invention, between the two rows of bricks a series of rigid poles are placed of suitable height. Between these poles the sections of roof are interposed, which may be of wood, and which are secured to shafts extending longitudinally between the poles and pivotting thereon in such a manner that each section of roof is capable of angular motion about the axes of said shafts. To each section of roof on either side of the poles is attached a cord, each cord being led up over pulleys or guides and secured to a main rope, extending at right angles to the smaller cords—that is to say, in the direction of the brick row and in such manner that by pulling at one end of this main rope all the sections of roofs on the hacks may be raised simultaneously, and again on releasing the rope they may all descend into their sheltering position, means being also provided for protecting the bricks from side rain, consisting of freely swinging hinged flaps attached to each section of roof and means for preventing said flaps from blowing inwards.

19,684 of 1904.—G. P. CAMPBELL: *Machinery for Making Building Blocks.*

A machine for making building blocks of cement, concrete, or the like, consisting in the combination of a mould or box into which the concrete or the like is introduced, said mould or box having hinged sides, a bed or base, extending bearing parts by which the supports or bearings which carry the hinges of the sides may be mounted and hinged at different points laterally, and a removable bottom plate resting on the bed for varying the depth of the stone to be made.

19,994 of 1904.—W. P. MORGAN: *Ventilation of Buildings and the like.*

A system of ventilating buildings or rooms consisting of a pipe passing horizontally through the building from side to side over the said room, and having a communication with the said room through a downward orifice entering into an upward cast of the said horizontal pipe.

20,025 of 1904.—H. W. PARKINSON, A. C. PARKINSON, and E. C. ROE: *Construction of Bolt Fastening.*

This relates to the manufacture of a sliding bolt for a door, comprising three separately constructed portions, namely, a nose portion and socket, wherein it is adapted to be slidably guided, a second portion composed of a handle and a socket, wherein it also is adapted to be slidably guided, and a third portion adapted to be interposed between the nose and handle parts and to connect them rigidly together, this latter portion being provided with a separate socket within which it also is slidably guided, a striking plate, the engaging surface of which is so inclined to the line of slide of the bolt that the engagement commences with slight pressure thereon of the nose of the bolt, and which pressure increases when the bolt is thrust into further engagement with the striking plate, a bead formed on the frame of the door, and its counterpart formed on the frame of the opening to be closed by the door, whereby the air tightness of the closed aperture is adapted to be increased.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

28,061 of 1904.—C. V. CHILDS: *Concrete Walls, Hollow Shafts, and Chimneys.*

A chimney or other shaft made of concrete, cast round a number of vertical bars having a number of ribs or projections on each side, some or all of said bars being bent at their lower ends in one direction, so as to be horizontal and embedded within the foundations, and similar bars bent in the other direction within the foundations, so that the whole structure is reinforced.

28,119 of 1904.—C. LINFORD: *Combined Bath and Sink.*

This invention consists of a combined bath and sink made so that either may be available for use at will. The combined bath and sink may be made from hard or soft wood, cast or sheet metal, enamelled or painted, and it has trunnions at either end, which suspend it pivotally in bracket bearings and which hold it clear of the floor. The bottom of the bath is flatter than an ordinary one, and on the under side it has a tip provided all round to form a sink. Means are provided for keeping the combined bath and sink steady for use. A covering board may be made to slidably cover either bath or sink for use as a table.

29,225 of 1904.—F. JOHNSON.—*Machine for Cutting and Delivering Bricks from Brick-making Machines.*

According to the invention, the clay is fed into the pugmills and forced through a brick die fixed at one end of said pugmill, and passes out of the die in a continuous column, on to a cutting-off table, provided with a wire frame, with wires arranged to suit the thickness of bricks to be cut. A portion of the moving column is, in the first instance, cut by a separate wire of sufficient length for cutting the required number of bricks. The said wire is fixed vertically to a horizontal sliding bow, and is manipulated by an attendant who, as soon as the column is separated, quickly places the same in front of the wire frame, another attendant at the same time operates the lever placed at the extreme front end of the table and drives the separated part of the column through the wire frame, and delivers the cut bricks on to a receiving pallet placed behind the wire frame. The pallet containing the cut bricks is then lifted on to a barrow.

4,245 of 1905.—E. SCHMATOLLA: *Kilns for Burning Limestone, Dolomite, and the like.*

A kiln for burning limestone, dolomite, and the like with the gases from a generator furnace, consisting in the combination with a gas passage in the base of the kiln, lateral communicating channels leading to gas ducts, gas inlets opening from such ducts into the kiln, air ducts outside such gas ducts and provided with regenerative passages, air inlets openings from the air ducts into the kiln above the gas inlets, and a projecting air distributing ring arranged at the base of the kiln shaft.

2,636 of 1905.—A. W. LAWDER and M. N. RIDLEY: *Ventilating Valves, Sluice Traps, or other Similar Apparatus.*

This relates to valves, sluice traps, or the like having two or more valves arranged at different levels, and consists in constructing one valve so that it overhangs the other valve, the overhanging portion being connected by a straight or inclined diaphragm.

SOME RECENT SALES OF PROPERTY

ESTATE EXCHANGE REPORT.

August 2.—By MADDISON, MILES, & MADDISON (at Yarmouth).

Caistor, Norfolk.—A freehold and copyhold occupation, 6 a. 2 r. 6 p. £650

Bradwell, Norfolk. — Freehold house and market gdn., 11 a. 3 r. 3 p. 650

August 3.—By RENDELL & SYMONS (at Newton Abbot).

Manaton, Devon.—"Water Estate," 308 a. 3 r. 2 p., f. 4,600

August 5.—By C. R. MORRIS, SONS, & PEARD (at Honiton).

Colyton, Devon. — "Blamphayne Farm," 69 a. 2 r. 35 p., f. 1,300

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; l.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

MEETINGS.

SATURDAY, AUGUST 19.

Northern Architectural Association.—An Excursion Meeting. Members to assemble at Sunderland Railway Station at 3.8 p.m., upon the arrival of the 2.50 p.m. train from Newcastle.

SATURDAY, SEPTEMBER 2.

Incorporated Association of Municipal and County Engineers.—Midland District Meeting to be held at Kettering.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the rate of 19s. per annum (52 numbers) PREPAID. To all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum. Remittances (payable to J. MORGAN) should be addressed to the Publisher of "THE BUILDER," Catherine-street, W.C.

SUBSCRIBERS in LONDON and the SUBURBS, by prepaying at the Publishing Office 19s. per annum (52 numbers) or 4s. 9d. per quarter (13 numbers), can ensure receiving "The Builder" by *Friday Morning's Post.*

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£	s.	d.	
Hard Stocks	1	8	0	per 1000 alongside, in river.
Rough Stocks and Grizzles	1	4	0	" " "
Facing Stocks ...	2	0	0	" " "
Shippers	2	0	0	" " "
Flettons	1	7	0	" at railway depôt.
Red Wire Cuts ...	1	14	0	" " "
Best Fareham Red	3	12	0	" " "
Best Red Pressed Ruabon Facing	5	0	0	" " "
Best Blue Pressed Staffordshire ...	4	2	6	" " "
Do. Bullnose	4	7	6	" " "
Best Stourbridge Fire Bricks.....	4	0	0	" " "
GLAZED BRICKS. Best White and Ivory Glazed Stretchers	12	0	0	" " "
Headers	11	0	0	" " "
Quoins, Bullnose, and Flats.....	16	0	0	" " "
Double Stretchers	19	0	0	" " "
Double Headers...	16	0	0	" " "
One Side and two Ends	19	0	0	" " "
Two Sides and one End	20	0	0	" " "
Splays, Chamferred, Squints	20	0	0	" " "
Best Dipped Salt Glazed Stretchers, and Header	12	0	0	" " "
Quoins, Bullnose, and Flats.....	14	0	0	" " "
Double Stretchers	15	0	0	" " "
Double Headers...	14	0	0	" " "
One Side and two Ends	15	0	0	" " "
Two Sides and one End	15	0	0	" " "
Splays, Chamferred, Squints	14	0	0	" " "
Second Quality White and Dipped Salt Glazed	2	0	0	" less than best.

	s.	d.	
Thames and Pit Sand.....	7	0	per yard, delivered.
Thames Ballast.....	5	9	" "
Best Portland Cement	27	0	per ton, "
Best Ground Blue Lias Lime	20	0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime.....12s. 0d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s.	d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1	6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1	8½	" "
PORTLAND STONE (20 ft. average)— Brown Whitbed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf...	2	1	" "
White Basebed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf...	2	2½	" "

	s.	d.	
Ancaster in blocks	1	11	per ft. cube, deld. rly. depôt.
Beer "	1	6	" "
Greenshill "	1	10	" "
Darley Dale in blocks...	2	4	" "
Red Corsehill "	2	5	" "
Closeburn Red Freestone	2	0	" "
Red Mansfield "	2		" "

YORK STONE—*Robin Hood Quality.*

Scappled random blocks	2	10	" "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2	6	" "
3 in. sawn two sides slabs (random sizes)	0	11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7½	" "
1½ in. to 2 in. ditto, ditto	0	6	" "

HARD YORK—

Scappled random blocks	3	0	per ft. cube. "
6 in. sawn two sides, landings to sizes (under 40 ft. super.)	2	8	per ft. super. "
6 in. rubbed two sides ditto	3	0	" "
3 in. sawn two sides (slabs random sizes)	1	2	" "
2 in. self-faced random flags	0	5	" "

STONE (*continued*).

HARD YORK (*continued*)—

	s.	d.	
Hopton Wood (Hard Bed) in blocks	2	0	per ft. cube, deld. rly. depôt.
" " " 6 in. sawn both sides landings	2	7	per ft. super. deld. rly. depôt.
" " " 3 in. sawn both sides random slabs	1	0	" "
" " " 2 in. do.	0	8½	" "

SLATES.

in. in.	£	s.	d.	
20 × 10 best blue Bangor	13	2	6	per 1000 of 1200 at r. d.
20 × 12 " "	13	17	6	" "
20 × 10 first quality "	13	0	0	" "
20 × 12 " " "	13	15	0	" "
16 × 8 " " "	7	5	0	" "
20 × 10 best blue Portmadoc	12	12	6	" "
16 × 8 " "	6	12	6	" "
20 × 10 best Eureka unfading green .	15	17	6	" "
20 × 12 " "	18	7	6	" "
18 × 10 " "	13	5	0	" "
16 × 8 " "	10	5	0	" "
20 × 10 permanent green	11	12	6	" "
18 × 10 " "	9	12	6	" "
16 × 8 " "	6	12	6	" "

TILES.

	s.	d.	
Best plain red roofing tiles .	42	0	per 1000 at rly. depôt.
Hip and Valley tiles ...	3	7	per doz. " "
Best Brosely tiles.....	50	0	per 1000 " "
Do. Ornamental tiles	52	6	" " "
Hip and Valley tiles ...	4	0	per doz. " "
Best Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 " "
Do. Ornamental do	60	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	0	" " "
Best Red or Mottled Staffordshire do. (Peakes).....	51	9	per 1000 " "
Do. Ornamental do.....	54	6	" " "
Hip tiles	4	1	per doz. " "
Valley tiles	3	8	" " "
Best "Rosemary" brand plain tiles.....	48	0	per 1000 " "
Best Ornamental tiles	50	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	8	" " "
Best "Hartshill" brand plain tiles, sand faced.	50	0	per 1000 " "
Do. pressed.....	47	6	" " "
Do. Ornamental do	50	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	6	" " "

WOOD.

BUILDING WOOD.	At per standard. £	s.	d.	£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in	13	10	0	15	0	0
Deals: best 3 by 9.....	13	0	0	14	0	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	0	0	12	0	0
Battens: best 2½ by 6 and 3 by 6 ..	0	10	0	less than 7 in. and 8 in.		
Deals: seconds	1	0	0	less than best.		
Battens: seconds	0	10	0	" " "		
2 in. by 4 in. and 2 in. by 6 in....	9	0	0	10	0	0
2 in. by 4½ in. and 2 in. by 5 in....	8	10	0	9	10	0
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.	0	10	0	more than battens.		
¾ in.	1	0	0	"		

JOINERS' WOOD.	At per load of 50 ft.					
Fir timber: best middling Danzig or Memel (average specification)	4	10	0	5	0	0
Seconds	4	0	0	4	10	0
Small timber (8 in. to 10 in.) ...	3	12	6	3	15	0
Small timber (6 in. to 8 in.)	3	0	0	3	10	0
Swedish balks	2	10	0	3	0	0
Pitch-pine timber (30 ft. average)	3	5	0	3	15	0

JOINERS' WOOD.	At per standard. £	s.	d.	£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in	24	0	0	25	0	0
3 in. by 9 in.	22	0	0	23	0	0
Battens, 2½ in. and 3 in. by 7 in.	16	10	0	18	0	0
Second yellow deals, 3 in by 11 in.....	18	10	0	20	0	0
" " 3 in. by 9 in.	17	10	0	19	0	0
Battens, 2½ in. and 3 in. by 7 in.	13	10	0	14	10	0
Third yellow deals, 3 in. by 11 in. and 9 in.	13	10	0	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	0	0	12	0	0
Petersburg: first yellow deals, 3 in. by 11 in.	21	0	0	22	10	0
Do. 3 in. by 9 in.....	18	0	0	19	10	0
Battens.....	13	10	0	15	0	0
Second yellow deals, 3 in. by 11 in.	16	0	0	17	0	0
Do. 3 in. by 9 in.....	14	10	0	16	0	0
Battens.....	11	0	0	12	10	0
Third yellow deals, 3 in. by 11 in.	13	0	0	14	0	0
Do. 3 in. by 9 in.....	12	10	0	14	0	0
Battens.....	10	0	0	11	0	0
White Sea and Petersburg :— First white deals, 3 in. by 11 in.	14	10	0	15	10	0
" " 3 in. by 9 in.	13	10	0	14	10	0
Battens	11	0	0	12	0	0
Second white deals, 3 in. by 11 in.	13	10	0	14	10	0
" " 3 in. by 9 in.	12	10	0	13	10	0
" " battens	10	0	0	11	0	0
Pitch-pine: deals.....	16	10	0	20	0	0
Under 2 in. thick extra	0	10	0	1	0	0
Yellow Pine—First, regular sizes	44	0	0	upwards.		
Oddments	32	0	0	"		
Seconds, regular sizes.....	33	0	0	"		
Yellow Pine oddments	28	0	0	"		
Kauri Pine—Planks, per ft. cube .	0	3	6	0	5	0
Danzig and Stettin Oak Logs— Large, per ft. cube	0	3	0	0	3	6
Small " "	0	2	6	0	2	9
Wainscot Oak Logs, per ft. cube.	0	5	0	0	5	6
Dry Wainscot Oak, per ft. sup. as inch	0	0	8	0	0	9
¾ in. do. do.	0	0	7	—		

PRICES CURRENT.—*Continued on page 219.*

COMPETITION, CONTRACTS, AND PUBLIC APPOINTMENTS.

(For some Contracts, etc., still open, but not included in this List, see previous issues.)

COMPETITION.

Nature of Work.	By whom Required.	Premiums.	Designs to be Delivered
*SECONDARY SCHOOL FOR GIRLS	County Borough of Preston	50*l.*, 30*l.*, and 20*l.*	Oct. 16

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, etc., supplied by	Tenders to be Delivered
Foreign Animals Wharf and Carriages	Glasgow Corporation	Master of Works, 64, Cochrane-street, Glasgow	Aug. 21
Plate Girder Spans	Sec. of State for Indian Council	Director General of Stores, India Office Whitehall, S.W.	Aug. 22
Scavenging	Rhondda U.D.C.	W. J. Jones, Surveyor, Public Offices, Pentre, Rhondda	do.
Additions and Sanitary Work, West-st. Mixed School	Crewe Education Committee	H. D. Struthers, Technical Institute, Crewe	do.
Additions & Sanitary Work, West-st. Infants' School	do.	do.	do.
Additions and Sanitary Work, Edleslow-road Schools	do.	do.	do.
Additions and Sanitary Work, Broad-street Schools	do.	do.	do.
Houses at Capcoch, near Aberdare	Capcoch Building Club	T. Roderick, Architect, Ashbrook House, Aberdare	do.
Scarifying and Rolling	Beccles Corporation	T. O. Cudbird, Borough Surveyor, Beccles	do.
Heating Apparatus, Prim. Meth. Ch., Wheatley Hill		W. Snaith, 23, Walmerhausen st., Wheatley Hill, Thornby, R.S.O.	do.
Making Streets and Passages	Wallasey U.D.C.	District Surveyor to Council, Public Offices, Egremont	Aug. 23
Water Main at Glenageary, Kingstown	Kingstown U.D.C.	Town Surveyor, Town Hall, Kingstown, Ireland	do.
Ten Cells for Vagrants at Workhouse	Houghton-le-Spring Guardians	Workhouse Master	do.
Rebuilding Hare and Hounds Inn, Coventry	Messrs. Atkinson's Brewery	Harrison & Hattrell, Architects, 93, Hertford-street, Coventry	do.
Painting at Foreign Animals Wharf, Trafford Wharf	Manchester Markets Committee	City Architect, Town Hall, Manchester	Aug. 24
Inter. Fittings, Central Drapery Stores, Commercial-st.	Batley Co-operative Society	H. B. Buckley, Architect, 85, Commercial-street, Batley	do.
900 tons of Broken Granite	Stowmarket U.D.C.	P. C. G. Hayward, Clerk, Old Bank, Butter Market, Stowmarket	do.
Two Houses, Burley-in-Wharfedale		Milne & France, Architects, 99, Swan Arcade, Bradford	do.
Alterations to No. 57, Hardshaw-street, St. Helens	Prescot Guardians	J. Gandy, Architect, St. Helens	do.
Cleaning & Paint. Premises, Hardshaw-st., St. Helens	do.	do.	do.
Dwelling House, Horn Cop, Kendal	Mr. J. Wiper	W. Levens, Highfield, Kendal	do.
Refuse Destructor for Poorhouse	Receiver Gen. of Contracts, Valletta	Crown Agents for Colonies, Whitehall-gardens, S.W.	Aug. 25
Wrought-iron Casements for Windows of Workshops	do.	do.	do.
Carpenter & Joiner Work, new Departs., Hanson Sch.	Bradford Education Committee	Architect's Department, Education Office, Manor-row, Bradford	do.
*1,000 FT. OF ROAD, ETC., AT HIGHGATE		E. Millard, Finsbury-circus, E.C.	do.
Piggery, Iron Roof to Barn at Bosfrankan, St. Burgan	Rt. Hon. Viscount Falmouth	G. Gow, Tregothnan Office, Truro	Aug. 26
Repairs, Queensbury Catherine Slack Provided Sch.	West Riding Education Committee	J. Vickers Edwards, County Architect, County Hall, Wakefield	do.
Heating, etc., Otley North Parade Provided School	do.	do.	do.
950 tons of Granite-dressed Setts	Oswaldtwistle U.D.C.	B. J. Westwell, Clerk to Council	do.
Sewerage Works	Ely U.D.C.	Surveyor's Office, Waterside, Ely	do.
*ERECT. OF CARSHEDS FOR ELEC. TRAMWAYS	South Shields Town Council	Borough Engineer, Chapter-row, South Shields	do.
Private Street Works, Kentsford-road, Kents-bank	Grange-over-Sands U.D.C.	T. Huddleston, Surveyor, Council Offices, Grange-over-Sands	Aug. 28
Cement Concrete Paving, etc., Narberth	Narberth U.D.C.	G. R. Morris, Clerk, High-street Narberth	do.
Additions to Tadley Council School	Southampton C.C.	W. J. Taylor, County Surveyor, The Castles, Winchester	do.
Sewering and Walling at Cemetery	Runcorn U.D.C.	Surveyor's Office, Town Hall, Runcorn	do.
220 yds. of Pipe Sewer, Westfield-road	do.	do.	do.
Additions to Hambledon Mixed Schools		W. J. Taylor, County Surveyor, The Castle, Winchester	do.
Footbridge Across River, Yerysyplwm	Llantrisant Parish Council	W. J. Morley & Son, Architects, Craven House, Kingsway, W.C.	Aug. 29
Wesleyan Church, Barnes		W. Farrington, Surveyor, Council Offices, Woodford Green	do.
Broken Granite	Woodford U.D.C.	do.	do.
Steam Rolling and Scarifying	do.	W. Dowdeswell, Architect, John-street, Treharris	do.
Forty Houses at Edwardsville, Treharris	Treherne Building Co., Ltd.	Borough Engineer's Office	do.
Private Improvement Works	Bootle Corporation	Sir Aston Webb, 19, Queen Anne's-gate, S.W.	do.
*ADMIRALTY EXTEN. BLOCK IV. (SUBSTRUC.)	Commissioners of H.M. Works	C. Chambers Smith, Surveyor, Municipal Offices, Sutton	Aug. 30
Roadworks (Sewering and Paving)	Sutton (Surrey) U.D.C.	J. Dixon, Engineer, 217, St. Vincent-street, Glasgow	do.
Two Lancs. Boilers, Motherwell Middle Wd. Hospital		do.	do.
Steam & Feed Pipes, Pumps, Motherwell Hospital	Batley Co-operative Society	H. B. Buckley, Architect, 85, Commercial-street, Batley	Aug. 31
Inter. Fittings, Central Grocery Stores, Commercial-st.	Bucks County Education Com.	Harrington, Key, & Kersham, 65, Bishopsgate-st. Without, E.C.	do.
*ELEMENTARY SCHOOLS AT WOLVERTON	Bradford Corporation	Mill-street Gasworks, Bradford	do.
Stores	Sedgfield R.D.C.	J. W. Lodge, Clerk, Sedgefield, Ferryhill, Durham	Sept. 1
Main Sewer & Sewage Disposal, Ferryhill, Chilton, etc.	Morley Waterworks Committee	W. E. Putnam, Borough Engineer, Town Hall, Morley	do.
14,668 yds. of Cast-iron Pipes	do.	do.	do.
Laying Pipes	Pontypridd U.D.C.	R. P. Wilson, Consulting Engineer, 66, Victoria-st., Westminster	Sept. 2
Permanent Way	Margan U.D.C.	J. Cox, Surveyor to Council, Port Talbot	do.
Council Offices, Talbach		A. W. Kyle, Architect and Surveyor, Burnopfield	do.
Wesleyan Sunday School, Burnopfield	N.E. Railway Co.	W. J. Cudworth, Engineer to Company, York	Sept. 4
Steel Bridge, Manor-road, Scarborough	Sunderland Corporation	Borough Engineer, Town Hall, Sunderland	do.
Widening Southwick-road Bridge, etc.	Steyning West R.D.C.	F. Slaughter, Surveyor, High-street, Steyning	do.
Paving and Kerbing, Railway Hotel Front, Lancing.	Trustees	T. E. Jones, Architect, 1, Cambrian-street, Rhymney	do.
Alterations to Ebenezer Calvinist Chapel, Twyncarno	Crook U.D.C.	Surveyor's Office, Council Office, Crook, Durham	do.
Drainage Works, West Roddymoor	Great Northern Railway Co., Ireland	W. H. Mills, Engineer, Amien's-street Terminus, Dublin	do.
Station-master's House at Castlewellan	do.	do.	do.
Station-master's House at Portadown	do.	do.	do.
Station-master's House at Smithborough	Right Hon. Lord Kensington	J. Barbour & Bowie, Architects, Dumfries, N.B.	do.
Improvements, Mansion Ho., St. Brides, Pembroke	Sawbridgeworth U.D.C.	Council Offices, Bell-street, Sawbridgeworth	do.
*ERECTION OF FIRE STATION	H.M. Office of Works	H.M. Office of Works, Storey's Gate, Westminster, S.W.	Sept. 5
*POST OFFICE AT BLACKBURN	Mr. & Mrs. Tabesin James	A. T. James, Hawthorne House, Gloucester-terrace, Aberdare	do.
Twenty Houses Outside of Abergwawe Brewery	Metropolitan Asylums Board	Office of the Board, Embankment, E.C.	do.
*DISMAN., ETC., BLR. FD. PMPS., ETC., TOOTING	Great Western Railway Co.	Office of the Engineer, Wolverhampton Station	do.
*EXTENSION OF GOODS SHED AT LYE	West Lancashire R.D.C.	C. Law-Green, Surveyor, Wigan-road, Ormskirk	Sept. 6
Two Small Bridges, Halsall	Croydon Education Committee	Education Office, Katherine-street, Croydon	Sept. 7
*ERECTION OF SCHOOL, THORNTON HEATH	Admiralty	Civil Engineer, H.M. Dockyard, Pembroke Dock	Sept. 8
*COASTGUARD BLDGS., NELL'S POINT, BARRY	Edinburgh Corporation	F. A. Newington, Engineer, Dewar-place, Edinburgh	Sept. 11
Electric Lighting, Mortuary Bldgs., High Scho. Yards	Gloucester Education Committee	M. H. Medland, County Architect, 15, Clarence-street, Gloucester	do.
Elementary School at Lydney	Herne Bay U.D.C.	F. W. J. Palmer, Surveyor, Town Hall, Herne Bay	Sept. 14
Timber for Piles, etc.	Bishop's Stortford U.D.C.	T. Swatheridge, Council Offices, 7, North-st., Bishop's Stortford	Sept. 18
Cornish Boiler at Waterworks	Barnet Chancel Estate Trustees	E. Dolton, 35, Wood-street, Barnet	Sept. 23
*ERECTION OF CHURCH HOUSE AT BARNET	Bombay Port Trust	Sir J. Wolfe Barry & A. J. Barry, 7, The Sanctuary, Westminster	Sept. 25
Pier for Tank-Oil Steamers, Lewree, Bombay	L.C.C.	Superintending Architect's Dept., 15, Pall Mall East, S.W.	Sept. 26
*BLKS. OF BLDNG. AT WESTMINST. TECH. INST.	Cardiff District Collieries	Manager, Bryncethin, Bridgend	No date.
Railway Siding, 500 yds. long		J. Young & Co., Architects, 62, Market-street, Bradford	do.
Detached Residence at Thornbury	Leeds R.D.C.	H. H. Hodgson, Oakwood Offices, Wetherby-rd., Roundhay, Leeds	do.
Street Lamps in Roundhay		G. F. Bowman, Architect, 5, Greek-street, Leeds	do.
Houses and Shops, Waterloo-road, Hunslet, Leeds		Deacon & Hornburgh, Archs., 12, St. George's-crescent, Liverpool	do.
Library, Mexborough		R. Anderson, C.E., 39, Victoria-street, Westminster	do.
Forming and Sewering Two Miles of Roads		War Office, Atterbury-street, Grosvenor-road, S.W.	do.
*PAINTING ROYAL VICTORIA HOS., NETLEY	War Office		

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in
*BUILDING INSPECTOR	Northamptonshire C. C.	150*l.* per annum	Sept. 4
*TEACHER OF METAL WK., SHDTCH. TECH. IN.	London C.C.	15*s.* an attendance	Sept. 6

Those marked with an asterisk (*) are advertised in this number. *Competitions*, iv. *Contracts*, iv. vi. viii. x. *Public Appointments* xvi.

PRICES CURRENT—*Continued from page 217.*

WOOD (*continued*).

JOINERS' WOOD (*continued*)—	At per standard. £ s. d.	£ s. d.
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch ...	0 0 9	0 1 0
Selected, Figury, per ft. sup. as inch ...	0 1 6	0 2 6
Dry Walnut, American, per ft.sup. as inch ...	0 0 10	0 1 0
Teak, per load ...	17 0 0	22 0 0
American Whitewood Planks, per ft. cube ...	0 4 0	0 5 0
Prepared Flooring, etc.—	Per square.	
1¼in. by 7 in. yellow, planed and shot ...	0 13 6	0 17 6
1 in. by 7 in. yellow, planed and matched ...	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched ...	0 16 0	1 0 0
1 in. by 7 in. white, planed and shot ...	0 12 0	0 14 6
1 in. by 7 in. white, planed and matched ...	0 12 6	0 15 0
1¼ in. by 7 in. white, planed and matched ...	0 15 0	0 16 6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0 11 0	0 13 6
1 in. by 7 in. do. do.	0 14 0	0 18 0
¾ in. by 7 in. white do. do.	0 10 0	0 11 6
1 in. by 7 in. do. do. do.	0 12 9	0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections ...	6 0 0 ...	6 15 0
Compound Girders, ordinary sections ...	7 10 0 ...	8 10 0
Steel Compound Stancheons ...	9 2 6 ...	10 12 6
Angles, Tees and Channels, ordinary sections ...	7 10 0 ...	8 10 0
Flitch Plates ...	7 15 0 ...	8 5 0
Cast Iron Columns and Stanchions including ordinary patterns ...	6 12 6 ...	7 15 0

METALS.

IRON—	Per ton, in London. £ s. d.	£ s. d.
Common Bars ...	7 0 0 ...	7 10 0
Staffordshire Crown Bars, good merchant quality ...	7 10 0 ...	8 0 0
Staffordshire "Marked Bars"	9 10 0 ...	—
Mild Steel Bars ...	8 5 0 ...	8 15 0
Hoop Iron, basis price ...	8 15 0 ...	9 0 0
" " Galvanized ...	16 10 0 ...	—
("And upwards, according to size and gauge.)		
Sheet Iron, Black—		
Ordinary sizes to 20 g. ...	9 0 0 ...	—
" " 24 g. ...	10 0 0 ...	—
" " 26 g. ...	11 15 0 ...	—
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes—6 ft. by 2 ft. to 3 ft. to 20 g. ...	12 10 0 ...	—
Ordinary sizes to 22 g. and 24 g.	13 0 0 ...	—
" " 26 g. ...	14 0 0 ...	—
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g. ...	15 10 0 ...	—
" " 22 g. and 24 g.	16 0 0 ...	—
" " 26 g. ...	17 10 0 ...	—
Galvanised Corrugated Sheets—		
Ordinary sizes 6 ft. to 8 ft. 20 g.	12 10 0 ...	—
" " 22 g. and 24 g.	13 0 0 ...	—
" " 26 g. ...	13 15 0 ...	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	11 0 0 ...	—
Best Soft Steel Sheets, 22 g. & 24 g.	12 0 0 ...	—
" " " 26 g. ...	13 10 0 ...	—
Cut nails, 3 in. to 6 in. ...	9 0 0 ...	9 10 0
(Under 3 in., usual trade extras.)		

LEAD, &c.

	Per ton, in London. £ s. d.	£ s. d.
LEAD—Sheet, English, 3lb. and up	16 10 0 ...	—
Pipe in coils ...	17 0 0 ...	—
Soil pipe ...	19 10 0 ...	—
Compo pipe ...	19 10 0 ...	—
ZINC—Sheet—		
Vieille Montagne ... ton	29 15 0 ...	—
Silesian ...	29 10 0 ...	—
COPPER—		
Strong Sheet ... per lb.	0 0 11 ...	—
Thin " ... "	0 1 0 ...	—
Copper nails ... "	0 0 11 ...	—
BRASS—		
Strong Sheet ... "	0 0 10 ...	—
Thin " ... "	0 0 11 ...	—
TIN—English Ingots ... "	0 1 6 ...	—
SOLDER—Plumbers' ... "	0 0 7 ...	—
Tinmen's ... "	0 0 8½ ...	—
Blowpipe ... "	0 0 9½ ...	—

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds ...	2½d. per ft. delivered.
" fourths ...	1½d. " "
21 oz. thirds ...	3½d. " "
" fourths ...	2½d. " "
26 oz. thirds ...	4½d. " "
" fourths ...	3½d. " "
32 oz. thirds ...	5½d. " "
" fourths ...	4½d. " "
Fluted Sheet, 15 oz. ...	3d. " "
" 21 oz. ...	4d. " "
½ Hartley's Rolled Plate ...	2d. " "
⅓ " " " ...	2½d. " "
¼ " " " ...	2½d. " "

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes ...	per gallon	0 1 7½
" " " in barrels ...	"	0 1 9
" " " in drums ...	"	0 1 11
Boiled " " in pipes ...	"	0 1 10
" " " in barrels ...	"	0 1 11
" " " in drums ...	"	0 2 1
Turpentine, in barrels ...	"	0 3 7
" in drums ...	"	0 3 9
Genuine Ground English White Lead	per ton	19 15 0
Red Lead, Dry ...	"	19 5 0
Best Linseed Oil Putty ...	per cwt.	0 6 6
Stockholm Tar ...	per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish ...	0 8 0
Pale Copal Oak ...	0 10 6
Superfine Pale Elastic Oak ...	0 12 6
Fine Extra Hard Church Oak ...	0 10 0
Superfine Hard-drying Oak, for seats of Churches ...	0 14 0
Fine Elastic Carriage ...	0 12 6
Superfine Pale Elastic Carriage ...	0 16 0
Fine Pale Maple ...	0 16 0
Finest Pale Durable Copal ...	0 18 0
Extra Pale French Oil ...	1 1 0
Eggshell Flatting Varnish ...	0 18 0
White Copal Enamel ...	1 4 0
Extra Pale Paper ...	0 12 0
Best Japan Gold Size ...	0 10 6
Best Black Japan ...	0 16 0
Oak and Mahogany Stain ...	0 9 0
Brunswick Black ...	0 8 6
Berlin Black ...	0 16 0
Knotting ...	0 10 0
French and Brush Polish ...	0 10 0

TO CORRESPONDENTS.

NOTE.—The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

*** Denotes *accepted.* † Denotes *provisionally accepted***

ASHFORD (Kent).—For roadworks, Sackville-crescent and Western-avenue, for the Urban District Council. Mr. W. Terrill, Surveyor, Ashford:—

Sackville-crescent.

W. Wilson ...	£179 10 0	G. Barton ...	£158 0 0
F. Miskin, Ltd.	177 8 9	E. Iles, sen. ..	157 0 0
S. J. Brice & Sons, High-st., Rochester* ..	168 0 5	J. Mills ...	137 0 0

[Surveyor's Estimate, £186 16 1]

Western-avenue

J. Mills ...	£895 0 0	S. J. Brice & Sons, High-street, Rochester* ...	£702 2 2
W. Wilson ...	796 8 0		
G. Barton ...	772 15 0		
F. Miskin, Ltd.	747 12 6		
E. Iles, sen. ..	729 0 0		

[Surveyor's Estimate, £760 13 3]

BERGH APTON (Norfolk).—For alterations and additions to non-provided school. Mr. A. J. Lacey, Architect and Diocesan Surveyor, 6, Upper King-street, Norwich:—

Coleman & Furse	£484 16 1	R. C. Watts ..	£350 0 0
Podd & Fisher	442 0 0	J. H. Mickelburgh ...	334 0 0
Searles Bros. ..	437 0 0	H. A. Collinson	319 0 0
Chaston & Grimson ...	436 0 0	R. J. Dowe, Caistor, Norwich* ...	298 10 6
W. J. Larner ..	375 10 0		
M. Redgrave ..	369 0 0		

BROOKWOOD (Surrey).—For erecting new Council school, for the Surrey Education Committee. Messrs. Jarvis & Richards, architects, 36, Victoria-street, Westminster, S.W.:—

Enness Bros.	£5,296 0 0	Martin, Wells	£4,625 0 0
Minton ...	5,242 0 0	Hughes ...	4,624 9 8
Sycamore Works, Ltd.	5,158 0 0	Shopland ..	4,618 0 0
Beauchamp	4,991 12 7	Tribe & Robinson	4,595 0 0
Hudson	4,960 0 0	G. Elvy ...	4,441 0 0
East & Hyde	4,772 0 0	Fryer & Co.	4,336 11 10
Faggetter ..	4,758 0 0	Moss & Co...	4,326 17 7
Rennaw ..	4,740 0 0	Drowley & Co. ...	4,319 18 4
Cropley & Sons ...	4,739 0 0	W. Gale ...	4,269 10 2
Watson ...	4,736 2 4	G. Kemp ..	4,157 0 0
Oak Building Co. ...	4,697 6 2	Hawkins & Co. ...	3,932 9 8
Hyde ...	4,658 0 0		

BURTON-UPON-TRENT.—For alterations and additions to the electric lighting, and for alterations to the heating apparatus at the Town Hall, for the Public Library and Town Hall Committee. Mr. H. Beck, architect, 10, High-street, Burton-upon-Trent:—

Electric Lighting.

Barnett & Soans	£129 10	J. Richards Burton-on-Trent*	£99 0
Cross & Cross ..	123 12		

Heating.

Exors. of G. Cavigan ...	£170 7 6	Gough & Felgate, Burton-on-Trent* ..	£138 14 9

CASTLEFORD.—For improvement in Back Smallthorne-avenue, for the Urban District Council. Mr. Green, Surveyor, Council Offices, Castleford:—

J. Rodgers & Son, Albion-street, Castleford .. £559

CHESHAM.—For additions and alterations to the brewery, Chesham, for the Chesham Brewery, Ltd. Messrs. R. W. Andrews & Co., brewery architects and engineers, 148 and 150, Pentonville-road, London, N.:—

J. J. Wheeler ..	£3,244 15	J. Mead ...	£2,525 0
G. Bollom	2,940 0	G. Darlington ..	2,400 0
Webster & Cannon	2,840 0	W. Abbott & Son	2,375 0
Honour & Son	2,598 0	F. G. Rust* ..	2,240 0

DRIGG (Cumberland).—For erecting a villa at Drigg, for Mr. T. Wilson. Mr. J. S. Stout, architect, 36, Lowther-street, Whitehaven:—

Mason: J. Sharpe, Drigg‡ ...	£354 3 4
Joinery: R. Bragg, Workington§ ...	214 15 8
Plumbing: D. Burns & Co., Whitehaven	103 5 2
Slating and Plastering: W. Eilbeck, Gosforth ...	125 0 0
Painting: W. Dixon, St. Bees ...	16 0 0

‡ Grates not included. § Ironmongery not included.

EBBW VALE.—For road improvement works, for the Urban District Council. Mr. T. J. Thomas, Surveyor and Engineer, Ebbw Vale:—

W. Brown, Merthyr Tydfil* ... £526 13 1

EXMOUTH.—For the supply of pipes in connexion with the Littleham water supply, for the Urban District Council. Mr. S. Button, Surveyor and Water Engineer, Public Hall-chambers, Exmouth:—

J. Oakes & Co., 21, Wharf-road, City-road, London, N.* ... £113 16 6

GOODMAYES.—For levelling, paving, channelling, making good, and surface-water draining the passageway at rear of Nos. 508A to 554, High-road, for the Ilford Urban District Council. Mr. H. Shaw, Engineer and Surveyor, Town Hall, Ilford:—

H. W. Taylor ... £423 18 4

GRIMSBY.—For electric lighting of the new Highways Yard. Mr. W. A. Vignoles, Borough Electrical Engineer:—

Central Electric Co. ...	£96 4 0	Northern Electrical Co. ..	£85 0 0
D. J. Dolby ..	94 9 10	A. C. Dickins & Co., Grimsby*	68 14 0
Robinson & Emerson....	89 15 0		

GRIMSBY.—For widening and making up Alexandra-road (formerly Old Dock-road) on the east side, including footpaths of two side streets. Mr. H. Gilbert Whyatt, Borough Engineer:—

F. R. White .	£1,171 12 0	R. Mitchell ..	£1,011 19 8
T. R. Waterman ...	1,135 0 0	H. Mason, Cleethorpes*	941 2 2
Wilkinson & Houghton .	1,060 0 0		

HARROGATE.—For private street works in roads between Harlow Moor-drive and Harlow-terrace, for the Corporation. Mr. F. Bagshaw, Borough Engineer and Surveyor, Harrogate:—

Barker & Co., 5 and 6, Lowther-arcade, Harrogate* ... £785 12 11

HOVE.—For new paving works in Hova Villas, Shirley-street, and Blatchington-road, for the Corporation. Mr H. H. Scott, Borough Surveyor:—

J. Parsons & Sons, 118, Church road, Hove* £527

HULL.—For erecting a statue, to commemorate the North Sea disaster, to the crew of the steam trawler "Crane," for the committee elected from the members of the Blyth Boys Lodge, No. 18, of the R.A.O.B., Hull:—

L. R. Guthrie	£1,200	F. W. D. Jones ..	£250
Elkington & Co. ..	900	King & Co., Ltd...	215
Hart, Son, Peard & Co., Ltd. ...	735	Lawton & Pounder	200
Whitehead & Son..	300	A. Leake, Spring Bank West, Hull*	200
G. S. Hird ...	293	G. H. Leake ...	192

[And others.]

ILFORD.—For erecting a corrugated iron temporary school building at Uphall-road, for the Urban District Council. Mr. C. J. Dawson, architect, 11, Cranbrook-road, Ilford:—

F. Smith & Co. ... £1,450

ILFORD.—For erecting a cottage at the Outfall Works, Water-lane, for the Urban District Council. Mr. H. Shaw, Engineer and Surveyor, Town Hall, Ilford:—

W. E. Westgate ... £398

IPSWICH.—For alterations and additions to the County Hall, St. Helen's-street, for the East Suffolk County Council. Mr. H. Miller, County Surveyor, 16, Museum-street, Ipswich:—

Oak Building Co., Ltd. ...	£9,570	Grimswood ...	£8,498
Kenny ...	9,003	Roper ...	8,486
Ward ...	8,914	Linzell ...	8,256
Girling ...	8,715	T. Parkington & Son, Ipswich* ..	7,400
Bennett ...	8,630		

IPSWICH.—For alterations to business premises, Buttermarket. Mr. George William Leighton, architect:—

V. A. Marriott ...	£340	R. Girling* ...	£290
Catchpole, Ltd.	297		

IPSWICH.—For cleaning and re-decorating, and electric lighting the Presbyterian Church, Ipswich. Mr. G. W. Leighton, architect:—

Cleaning and Re-decorating.

Catchpole & Sons, Ltd. ... £62 10

Electric Lighting.

J. Pratt, jun. ...	£160 0
Mann, Egerton, & Co., Ltd. ...	123 0

LANCHESTER.—For erecting school, for the Trustees of the Lanchester Primitive Methodist Church. Mr. T. E. Taylor, architect and surveyor, Prospect House, Lanchester. Quantities by architect:—

E. R. Davison.	£631 0 0	L. Thornton ..	£507 18 0
J. Robson	625 0 0	F. Ward, Lanchester, co. Durham* ..	496 16 10
Ayton & Sons.	604 18 9		
E. Dyson	583 10 0		
T. Lubbock ..	557 19 0		

LLANGATTOCK-JUXTA-USK.—For alterations and additions to rectory house, for the Rev. H. G. Corner. Mr. W. H. Dashwood Caple, architect, Church-street-chambers, Cardiff :—

J. H. Leadbeter	£5,097	0	0	H. Smith	£894	0	0
Gwatkin Bros.	1,053	19	11	R. Meredith	810	14	6
J. Y. Thomas & Sons	995	0	0	J. Boyt, Llanddewi Rhydderch, Abergavenny*	787	7	6

LONDON.—For re-decorating Grosvenor Chapel, South Audley-street, W. Mr. William Pywell, architect :—

F. G. Minter	£347	0	0	Maple & Co., Ltd.	£257	0	0
Phillips & Son	313	10	0	Haywood Bros.	245	10	0
W. Wallis	298	0	0	Andrews & Son	242	0	0
Dallyn & Son	290	0	0				
Harrod's Ltd.	288	0	0				

LONDON.—For additions and alterations to the offices, etc., at the Borough Electricity Works, No. 85, Fulham Palace-road, for the Borough Council of Hammersmith. Mr. H. Mair, Borough Surveyor, Town Hall, Broadway, Hammersmith. Quantities by Messrs. C. Stanger & Son, F.S.I. :—

S. Polden	£2,279	0	0	J. Dorey & Co., Ltd.	£1,883	0	0
E. Wayland	2,267	9	2	W. H. Lorden & Son	1,878	0	0
J. G. Baker & Son	2,213	15	4	W. Wallis	1,857	12	0
Patman & Fotheringham, Ltd.	2,164	0	0	W. J. Renshaw	1,856	0	0
V. Wilcock & Co.	2,143	17	3	S. E. Moss & Co.	1,854	0	0
Sheffield Bros.	2,131	0	0	Stimpson & Co.	1,830	0	0
Spencer, Santo, & Co., Ltd.	2,120	0	0	W. Lawrence & Sons	1,827	0	0
J. McManus	2,119	0	0	Jones Bros.	1,820	0	0
G. Wimpey & Co.	2,096	0	0	Martin Wells & Co.	1,800	0	0
Spiers & Son	2,095	0	0	J. Parsons	1,790	0	0
Colley & Sons	2,089	17	0	G. H. Gibson	1,782	0	0
Dearing & Son	1,973	10	4	W. H. Hyde	1,762	0	0
H. Kent	1,968	0	0	J. Barker & Co., Ltd.	1,754	3	4
H. Lovatt, Ltd	1,947	0	0	J. & W. Drake	1,746	10	0
J. C. Richards & Co.	1,931	0	0	J. Christie	1,744	0	0
Appleby & Sons	1,895	0	0	R. Elvy	1,728	0	0
Lole & Co.	1,892	0	0	H. C. Payne	1,671	18	11
B. E. Nightingale	1,888	0	0	Wisdom Bros	1,638	12	5
Cowley & Drake	1,885	13	2	E. Wall	1,624	0	0
				F. & G. Foster*	1,607	0	0

LOWESTOFT.—For painting and redecorations at the technical schools, for the Education Committee. Mr. G. W. Leighton, Architect, Ipswich :—

Bedwell & Parker	£239	Searles & Wilton	£160
T. Curtis	203	F. Wright*	145
G. E. Hawes	197		

NEW SHILDON.—For kerbing and flagging in Redworth-road, for the Shildon and East Thickley Urban District Council. Mr. C. Heslop, Surveyor :—

L. Bell	£230	14	4	J. Moore	£151	2	10
G. Bell	169	3	11	A. Metcalfe, Dent-street, Shildon*	149	11	4
W. Coates	157	2	7				
W. Burdon	155	16	11				

NEWTON ABBOT.—For erecting a nursery, etc., at the Workhouse, for the Guardians. Mr. S. Segar, architect, Union-street, Newton Abbot :—

Wilkins & Sons	£1,989	0	0	H. C. Goss	£1,823	0	0
Parker Bros.	1,975	0	0	J. J. Stokes	1,820	0	0
E. Pike	1,935	0	0	A. C. Jones	1,800	0	0
W. E. Blake	1,890	0	0	F. A. A. Stacey	1,780	0	0
F. J. Zealley	1,849	0	0	H. Mills, Newton Abbot*	1,728	12	7
R. E. Narracott	1,827	12	6	F. J. Badcock	1,720	0	0

SHANGHAI.—For a terrace of seventeen residences at Shanghai, for Mr. J. R. Twentyman. Mr. W. M. Dowdall, architect :—

	Taels.
Shanghai Building & Investment Co., Ltd.	209,750
Yang Tse Ta	208,500
Wong Fah Kee	195,300
Zeen Yung Chong	194,988
Oriental Construction Co.	180,350
Zee Kuen Kee	178,500

[All of Shanghai.]

[The present value of the tael is about 2s. 8d. sterling.]

OVERSEAL.—For the construction of sewers, tanks, and filter at Shortheath, for the Heartshorne & Seals Rural District Council. Mr. A. Lewis, Surveyor, 2, Packington-road, Ashley-de-la-Zouch :—

Edwin Clarke	£345	0	0
Slater & Harrison, Overseal, Ashby-de-la-Zouch*	331	2	6
Orton & Son	323	10	0

SKIPTON.—For the construction of about 3,300 lineal yds. of 6-in., 9-in., and 12-inch earthenware pipe sewers, with manholes and lampholes ; also sewage tanks and bacterial filters and other necessary works for the sewerage and sewage disposal works of Grassington, for the Rural District Council. Mr. H. A. Johnson, engineer, 15, The Exchange, Bradford ; and Mr. A. Rodwell, surveyor, Skipton :—

Greaves & Wheaton, Calverley* .. £2430 15 7

SKIPTON.—For the construction of sewage tanks, bacterial filters, storm-water filter, engine-house, and other works for the extension of the Earby Sewage Disposal Works, for the Rural District Council. Mr. H. A. Johnson, engineer, 15, The Exchange, Bradford : Mr. A. Rodwell, surveyor, Skipton :—

G. Read & Sons, Burnley* £3,852 5 11

WALSALL.—For re-making Eastbourne-street, for the Corporation :—

J. Owens, St. Mark's-road, Wolverhampton £324

WALTHAMSTOW.—For supplying low pressure heating apparatus to the Mission-grove School, for the Walthamstow Education Committee. Mr. H. Prosser, Architect :—

J. Grundy & Co.	£447	0		Wontner-Smith, Gray, & Co.	£367	10	
Palowkar & Son	418	0		W. Cassidy	348	0	
Musgrave & Co.	415	0		Korting Bros.	325	0	
Russell & Co.	414	0		Boyd & Sons (late J. Jones & Sons), Shoe-lane*	289	0	
Price, Lea, & Co.	383	0					
W. J. Fox	368	0					

WALTHAMSTOW.—For the erection and completion of the Prospect Hill Presbyterian Church, for the Building Committee. Mr. J. Williams Dunford, architect, 1000 Queen Victoria-street, London, E.C. :—

Sands & Burley, Canning-road, Walthamstow† £5,240

WALTHAMSTOW.—For an addition to No. 181, Wood-street, for Mr. Thomas Davey. Mr. J. Williams Dunford, architect, 1000, Queen Victoria-street, London, E.C. :—

G. M. Page, Church Hill-road, Walthamstow* £197

WRINGTON.—For about two miles of sewers, etc. (sewerage works, Contract No. 1), for Axbridge Urban District Council. Mr. A. Powell, engineer, 10, Orchard-street College Green, Bristol :—

Pollard & Co., Taunton, Somerset* £1,926 11 9

W. H. Lascelles & Co.

121, BUNHILL ROW, LONDON, E.C.

Telephone No. 1365 London Wall.

HIGH-CLASS JOINERY,
LASCELLES' CONCRETE.

Architects' Designs are carried out with the greatest care.

CONSERVATORIES,
GREENHOUSES,
WOODEN BUILDINGS,

Bank, Office, and Shop Fittings.

CHURCH BENCHES & PULPITS.

ESTIMATES GIVEN ON APPLICATION.

The BATH STONE FIRMS, Ltd., BATH.

For all the Proved Kinds of

BATH STONE.

FLUATE, for Hardening, Waterproofing, and Preserving Building Materials.

HAM HILL STONE.
DOULTING STONE.

The Ham Hill and Doulting Stone Co., Limited (incorporating the Ham Hill Stone Co. and C. Trask and Son, The Doulting Stone Co.).

Chief Office :—Norton, Stoke-under-Ham, Somerset.

London Agent :—Mr. E. A. Williams, 16, Craven-street, Strand.

GREEK MARBLE.

White and Blue Pentelikon at Low Prices for BUILDING PURPOSES.

Beautiful Colours for Interior Decoration.

Full Particulars and Samples :—

MARMOR LIMITED,
18, Finsbury Square, E.C.

See Advt. p. xxi.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO., Ltd.,
LITHOGRAPHERS

Employ a large and efficient Staff especially for Bills of Quantities, &c.

4 & 5, East Harding-st., Fetter-lane, E.C.

QUANTITIES, etc., LITHOGRAPHED accurately and with despatch. [Telephone No. 434 Westminster.

METCHIM & SON { 8, PRINCES STREET, S.W., and 32, CLEMENT'S LANE, E.C.

"QUANTITY SURVEYORS' DIARY & TABLES," For 1905, price 6d., post 7d. In leather, 1/-, post 1/1.

PILKINGTON & CO

(ESTABLISHED 1838.)

MONUMENT CHAMBERS,
KING WILLIAM STREET, LONDON, E.C.

Telephone No., 6319 Avenue.

Registered Trade Mark.

Polonceau Asphalte.

PATENT ASPHALTE and FELT ROOFING.

ACID-RESISTING ASPHALTE.
WHITE SILICA PAVING.

PYRIMONT SEYSSEL ASPHALTE.

Patent "OPALITE" Tiling

TRADE MARK.

With Shelmerdine's Patent Granulated Backing.

SANITARY. DURABLE. EFFECTIVE. Is non-porous, and absolutely impervious to bacteria, fungi, or vermin.

The only Reliable Material for Lining Walls of SUBWAYS, LAVATORIES AREAS, KITCHENS, BATHROOMS, &c.

Invaluable for HOSPITAL WORK, Operating Rooms, &c.

WILL NOT CRACK OR CRAZE.

Over ***250,000*** *Square Yards Fixed in* ***LONDON*** *Alone.*

"OPALITE."

SUPPLIED AND FIXED BY

WILLIAM GRIFFITHS

(London Concessionaire of Patent Rights of the National Opalite Glazed Brick and Tile Syndicate, Limited).

126, HAMILTON HOUSE, BISHOPSGATE ST. WITHOUT, E.C.

Telegraphic Address: "OPALITE, LONDON." Telephone Nos. 2368 and 2369, LONDON WALL.

ORDINARY GLAZED TILING Executed with Care and Despatch by Competent Workmen.

Special attention is given to the requirements of FERRO-CONCRETE Contractors and Cement Specialists generally.

Consumers requiring a specially cool finely ground

SLOW

Setting Cement should specify

"BLUE TIERS."

ENGLISH PORTLAND CEMENT
J. B. WHITE & BROTHERS
LONDON
MILTONS
FRANCIS & CO
PORTLAND CEMENT
LONDON
BRANDS:-
"J. B. WHITE & BROS"
"HILTON ANDERSON & CO"
FRANCIS
"NINE ELMS"
ARE AMONG THE LEADING BRANDS SUPPLIED BY
The ASSOCIATED PORTLAND CEMENT MANUFACTURERS, (1900) LIMITED.
MANUFACTURED SOLELY FROM THE FINEST CHALK AND CLAY UNDER THE MOST APPROVED SCIENTIFIC METHODS AND WITH THE MOST UP-TO-DATE PLANT IN THE KINGDOM.
Tel: Address "PORTLAND" LONDON.
DIXON HOUSE
72, Fenchurch St
LONDON. E.C.
Tel: No 5690. AVENUE.

Consumers requiring a specially cool finely ground

QUICK

Setting Cement should specify

"RED TIERS."

The Company have unrivalled facilities for ensuring prompt deliveries in London and throughout the Kingdom.

VAL DE TRAVERS ASPHALTE

(COMPRESSED OR MASTIC)

Is the best material for Roadways, Footways, Damp Courses, Roofings, Warehouse Floors, Basements, Stables, Coach Houses, Slaughter Houses, Breweries, Lavatories, Tennis Courts, &c. *Full particulars can be obtained from the Offices,*

HAMILTON HOUSE, BISHOPSGATE STREET WITHOUT, E.C.

SLATE SLAB WORK.

ERNEST MATHEWS & CO.

Head Office: 61, ST. MARY AXE, LONDON, E.C.

SIRAPITE PLASTER.

RELIEF DECORATIONS

In Fibrous Plaster, Composition, Carton Pierre, and Wood.

GEO. JACKSON and SONS,

Specimens of Ceilings, Cornices, Chimney-Pieces, &c., in the above materials can be seen at - - - **49, Rathbone Place, London, W.**

TELEGRAMS:—
HORSELEY, TIPTON.
GALILEO, LONDON.

THE HORSELEY Co. Ld. TIPTON, Staffs.

Passenger Station— DUDLEY PORT.

London Office—
1, VICTORIA-ST.

ENGINEERS AND IRONFOUNDERS. *Estimates on Application.*

MAKERS OF **Lamp Pillars, Steel Roofs, Steel Sashes, Steel, Wrought, and Cast Iron Girders.**

EVERY DESCRIPTION OF BUILDERS' IRONWORK.

THE LIMMER ASPHALTE PAVING CO. LTD.

Sole Proprietors — **Montrotier Seyssel Asphalte Mines**

(BASSIN DE SEYSSEL.)

This Company's **Mineral Rock Mastic Asphalte** is specified by H.M. Office of Works, The Admiralty, Home Office, and other Government Departments, **for Roofing, Flooring, Damp Courses, &c.**

Estab. 1871. Highest Award Silver Medal at the Sanitary Congress, Glasgow, 1904.

LITHOFALT Mastic Paving—*Cheap and Durable.*

Head Offices—2, MOORGATE ST., LONDON, E.C.

PUBLISHER'S NOTICES.

Nat. Tel., 6112, Gerrard. Telegrams, "The Builder, London."

THE INDEX (with TITLE-PAGE) for VOLUME LXXXVIII. (January to June, 1905) was given as a supplement with the number of July 8th.

CLOTH CASES for Binding the Numbers are now ready, price 2s. 6d. each; also

READING CASES (Cloth), with Strings, price 9d. each.

THE EIGHTY-EIGHTH VOLUME of "The Builder" (bound), price Twelve Shillings and Sixpence, now ready.

SUBSCRIBERS' VOLUMES, on being sent to the Office, will be bound at a cost of 3s. 6d. each.

CHARGES FOR ADVERTISEMENTS.

COMPETITIONS, CONTRACTS, ALL NOTICES ISSUED BY CORPORATE BODIES, COUNTY AND OTHER COUNCILS, PROSPECTUSES OF PUBLIC COMPANIES, SALES BY TENDER, LEGAL ANNOUNCEMENTS, etc., etc.

Six lines or under ..... 6s. 0d.
Each additional line ..... 1s. 0d.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under..... 4s. 6d.
Each additional line (about ten words)..... 0s. 6d.

Terms for series of Trade advertisements, and for front page, and other special positions, on application to the Publisher.

SITUATIONS WANTED (Single-handed—Labour only).

Four lines (about thirty words) or under ..... 2s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

*** Stamps *must not* be sent, but all sums should be remitted by Postal Orders, payable to J. MORGAN, and addressed to the Publisher of "THE BUILDER," Catherine Street, W.C.

Advertisements for the current week's issue are received up to THREE o'clock p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after HALF-PAST ONE p.m. on that day. Those intended for the Outside Wrapper should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

PERSONS advertising in "THE BUILDER" may have *Replies addressed to the Office*, Catherine Street, Covent Garden, W.C., *free of charge*. Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES { NINEPENCE EACH. By post (carefully packed) 1s.

PRACTICAL HANDBOOKS FOR ARCHITECTS & BUILDERS.

ARCHITECTURAL HYGIENE; or, SANITARY SCIENCE AS APPLIED TO BUILDINGS. By BANISTER F. FLETCHER and H. PHILLIPS FLETCHER. 5s. net.

CARPENTRY AND JOINERY. By BANISTER F. FLETCHER and H. PHILLIPS FLETCHER. 5s. net.

SANITARY FITTINGS AND PLUMBING. By G. L. SUTCLIFFE, A.R.I.B.A., M.S.I. 5s. net.

ROADS: THEIR CONSTRUCTION AND MAINTENANCE. By ALLAN GREENWELL, A.M.I.C.E., and J. V. ELSDEN, F.G.S. 5s. net.

LAND SURVEYING AND LEVELLING. By A. T. WALMISLEY, M.I.C.E. 6s. net.

FIELD WORK AND INSTRUMENTS. By A. T. WALMISLEY. 5s. net.

STRUCTURAL IRON AND STEEL. By W. N. TWELVETREES, M.I.M.E. 6s. net.

SPECIFICATIONS FOR BUILDING WORKS, AND HOW TO WRITE THEM. By F. R. FARROW, F.R.I.B.A. 3s. 6d. net.

STRESSES AND STRAINS. Their Calculation and that of their Resistances by Formulæ and Graphic Method. By F. R. FARROW, F.R.I.B.A. 5s. net.

QUANTITIES AND QUANTITY TAKING. By W. E. DAVIS. 3s. 6d. net.

GAS AND GAS FITTINGS. A Handbook relating to Coal, Water, and Power Gas, and Acetylene. By H. F. HILLS, F.C.S. 5s. net.

WHITTAKER & CO., 2, WHITE HART ST., LONDON, E.C.

KING'S COLLEGE, LONDON.
(UNIVERSITY OF LONDON.)
FACULTY OF ENGINEERING AND APPLIED SCIENCE AND DIVISION OF ARCHITECTURE.
SESSION 1905-6 COMMENCES WEDNESDAY, OCTOBER 4.
PROFESSORS.
ENGINEERING.—DAVID S. CAPPER, M.A., M.Inst.C.E., M.I.M.E.; H. M. WAYNFORTH, A.M.Inst.C.E., A.M.I.M.E.; M. CURRY, M.Inst.C.E.
ELECTRICAL ENGINEERING.—E. WILSON, M.I.E.E.
NATURAL PHILOSOPHY.—H. WILSON, D.Sc.
ARCHITECTURE.—R. ELSEY SMITH, A.R.I.B.A.
CHEMISTRY.—J. M. THOMSON, F.R.S., F.I.C.; H. JACKSON, F.I.C.
MATHEMATICS.—S. A. F. WHITE, M.A.; J. B. DALE, M.A.
METALLURGY.—A. K. HUNTINGTON, A.R.S.M., M.I.M.E.
GEOLOGY and MINERALOGY.—H. G. SEELEY, F.R.S.
EVENING CLASSES are held for Mechanical and Electrical Engineering, Architecture and Building Construction, Drawing, Mathematics, Physics, and all Science Subjects.
For prospectuses and all information apply to
THE SECRETARY.
King's College, Strand, W.C.

SURVEYORS' INSTITUTION
EXAMINATIONS.—Complete COURSES of PREPARATION for these EXAMINATIONS are given either in Class, or by Correspondence, or in Office, by Messrs. PARRY, BLAKE, & PARRY. During the last few years over two thirds of the whole number of successful candidates have been prepared by them, while of the thirty-seven prizes last awarded, twenty-nine (or about 80 per cent.) were obtained by pupils taking their courses. The SIX and EIGHTEEN MONTHS' COURSES commence early in SEPTEMBER.—For full particulars of these courses, or for any advice with respect to the examinations, apply to Messrs. PARRY, BLAKE, & PARRY, 82, Victoria-street, Westminster. Telephone: 680, Westminster.

BILLS OF QUANTITIES, &c.,

LITHOGRAPHED CORRECTLY BY RETURN OF POST.
LIBERAL DISCOUNT OFF USUAL PRICES.
PLANS BEST STYLE.

ALLDAY, LIMITED,
Shakespeare Press, Birmingham.

ALLDAY, LIMITED,

have acquired the very complete and modern **Photo-Copying** business formerly carried on by the **"BLUE-PRINT" CO.** They solicit inquiries for

Photo-Copying, Photo-Lithography, and Architectural Assistance.

128-130, Edmund Street, BIRMINGHAM.

Nat. Telephone: 1171.

SURVEYS OF EVERY DESCRIPTION UNDERTAKEN FOR THE PROFESSION.

PLANS, ELEVATIONS, and SECTIONS of OLD BUILDINGS Accurately Prepared.

DIFFICULT SITES MEASURED, LEVELS, &c. *Recommended by many well-known Architects.*

Telephone: 1173 CENTRAL. **GEORGE R. MILES, 14, Southampton St., STRAND.**

R.I.B.A. EXAMINATIONS.
PREPARATION, personally or by correspondence, in 3, 6, 9, or 12 months' courses. ARCHITECTURAL LENDING LIBRARY, including model drawings, casts, etc.—For syllabus apply to Mr. A. G. BOND, B.A. Oxon., A.R.I.B.A. 115, Gower-street, W.C. (late Howgate & Bond).

SANITARY INSPECTORS', SURVEYORS', and SANITARY ENGINEERS' EXAMINATIONS held by the ROYAL SANITARY INSTITUTE, MUNICIPAL and COUNTY ENGINEERS' ASSOCIATION, the INSTITUTE of SANITARY ENGINEERS, the SANITARY INSPECTORS' EXAMINATION BOARD, and other Bodies.
A CIVIL ENGINEER and SURVEYOR (A.M.I.C.E., certificated Public Sanitary Inspector and Surveyor) PREPARES CANDIDATES by correspondence for the above. All or any single subject may be taken. Special corresponding classes in Surveying and Levelling, Building Construction and Quantities.
One to twelve months' courses of Office Instruction by arrangement. Work for 1905 now commencing.
For complete Syllabus (56 pages) of all subjects, terms, etc., apply to C. S. I., 28, Victoria-street, Westminster, S.W.

SANITARY INSTITUTE EXAMS.—Preparation for the Inspectors' Examination by a Correspondence Course, needing no text-books or Acts, by C. H. CLARKE, Assoc.San. Inst.; Fellow Inst. San. Engineers; Honours Medallist in Hygiene, etc.; Author of Clarke's "Aids"—Notes on Sanitary Law, 1s. 6d.; Examination Questions on San. Law, 6d.; Calculation of Cubic Space, 1s.; Trade Nuisances, 6d.; Practical Drain Inspection, 6d.—Prospectus and "Aids" from 120, Thoroldroad, Ilford, E.

MUNICIPAL and COUNTY ENGINEERS' EXAMINATION.—Messrs. PARRY, BLAKE, & PARRY, 82, Victoria-street, Westminster, PREPARE PUPILS by Correspondence for this Examination. The course of work may be taken to extend over six or twelve months, according to previous knowledge.

R.I.B.A., Society of Architects, and Civil Service TECHNICAL EXAMINATIONS.—PREPARATION by CORRESPONDENCE or RESIDENCE. Twenty-nine first places.—G. A. T. MIDDLETON, 19, Craven-street, Strand.

PARTNERSHIP WANTED.—ARCHITECT and SURVEYOR, with nine years' first-class provincial experience, thoroughly capable, qualified P.A.S.I., wishes to PURCHASE SHARE as JUNIOR PARTNER in well-established firm. Would pay from two to three years' purchase for same. Provinces preferred. Highest references given and required.—Address, L. M. WELLS BLADEN, Stone, Staffs.

PARTNERSHIP.—ACTIVE PARTNER, with knowledge of building trade and 2,000*l.* capital, can obtain SHARE in old-established Firm in good provincial town in western counties. Highly recommended for investigation.—Particulars from ARNOLD & CO., 60, Queen Victoria-street, London E.C.

GENERAL FOREMAN (joiner by trade), age 39, smart, pushing, and energetic, with capital, requires SITUATION on old-established Firm with view to PARTNERSHIP or taking over the business.—Address Box 330, Office of "The Builder."

ARCHITECT and SURVEYOR (member of Institute) wishes to PURCHASE small established GENERAL PRACTICE in London, embracing arbitrations, valuations, etc.—Address Box 371, Office of "The Builder."

BLOOMSBURY-SQUARE.—A fine SUITE of OFFICES, suitable for an architect, to be LET. Ground or first floor, with or without basement. An excellent opportunity.—L., 28, John-street, Bedford-row, W.C.

SHARE of OFFICE.—An ARCHITECT, with office in Holborn, can ACCOMMODATE another. Terms, 12*l.* per annum.—Box 3838, care of Judd's, 5, Queen Victoria-street, E.C.

COUNTY of LONDON.
L.C.C. SHOREDITCH TECHNICAL INSTITUTE.
APPOINTMENT OF TEACHER OF METALWORK.
The London County Council invite APPLICATIONS for APPOINTMENT as TEACHER of METALWORK in the day school of the L.C.C. Shoreditch Technical Institute for five half-days a week.
Salary at the rate of 15s. an attendance.
Applications should be made on the official form to be obtained from the CLERK of the COUNCIL, Education Offices, Victoria Embankment, W.C., to whom they must be returned not later than TEN a.m. on WEDNESDAY, 6th SEPTEMBER, 1905, accompanied by one copy of three testimonials of recent date. Candidates applying through the post for a form of application must enclose a stamped and addressed envelope.
Candidates, other than successful candidates invited to attend the Committee, will be allowed third-class return railway fare, but no other expenses.
Canvassing, either directly or indirectly, will be considered a disqualification.
G. L. GOMME,
Clerk of the London County Council.
Education Offices,
Victoria Embankment.

NORTHAMPTONSHIRE COUNTY COUNCIL.
EDUCATION COMMITTEE.
APPOINTMENT OF BUILDINGS INSPECTOR.
APPLICATIONS are invited for the POSITION of BUILDINGS INSPECTOR under the above Education Committee.
The officer appointed will be required to give his whole time to the work, and will receive a salary of 150*l.* per annum and travelling expenses, third-class.
Applicants must be under 45 years of age.
Previous experience in connexion with schools is looked for.
Applications, together with copies of not more than three recent testimonials, must reach the SECRETARY for EDUCATION not later than NOON on 4th SEPTEMBER, 1905.
Canvassing either directly or indirectly will be considered a disqualification.
A statement of duties can be obtained on application.
J. L. HOLLAND,
Secretary for Education.
County Education Offices,
Northampton.

DRAUGHTSMAN WANTED at once. Capable, but be able to prepare accurate working drawings from sketches. Salary, 100*l.* per annum.—Box 267, Office of "The Builder."

ART METAL.—REPRESENTATIVE WANTED with experience in building trade. Salary and commission.—Reply, stating age and experience, to G. R., care of F. W. Sears, 52, Ludgate-hill, E.C.

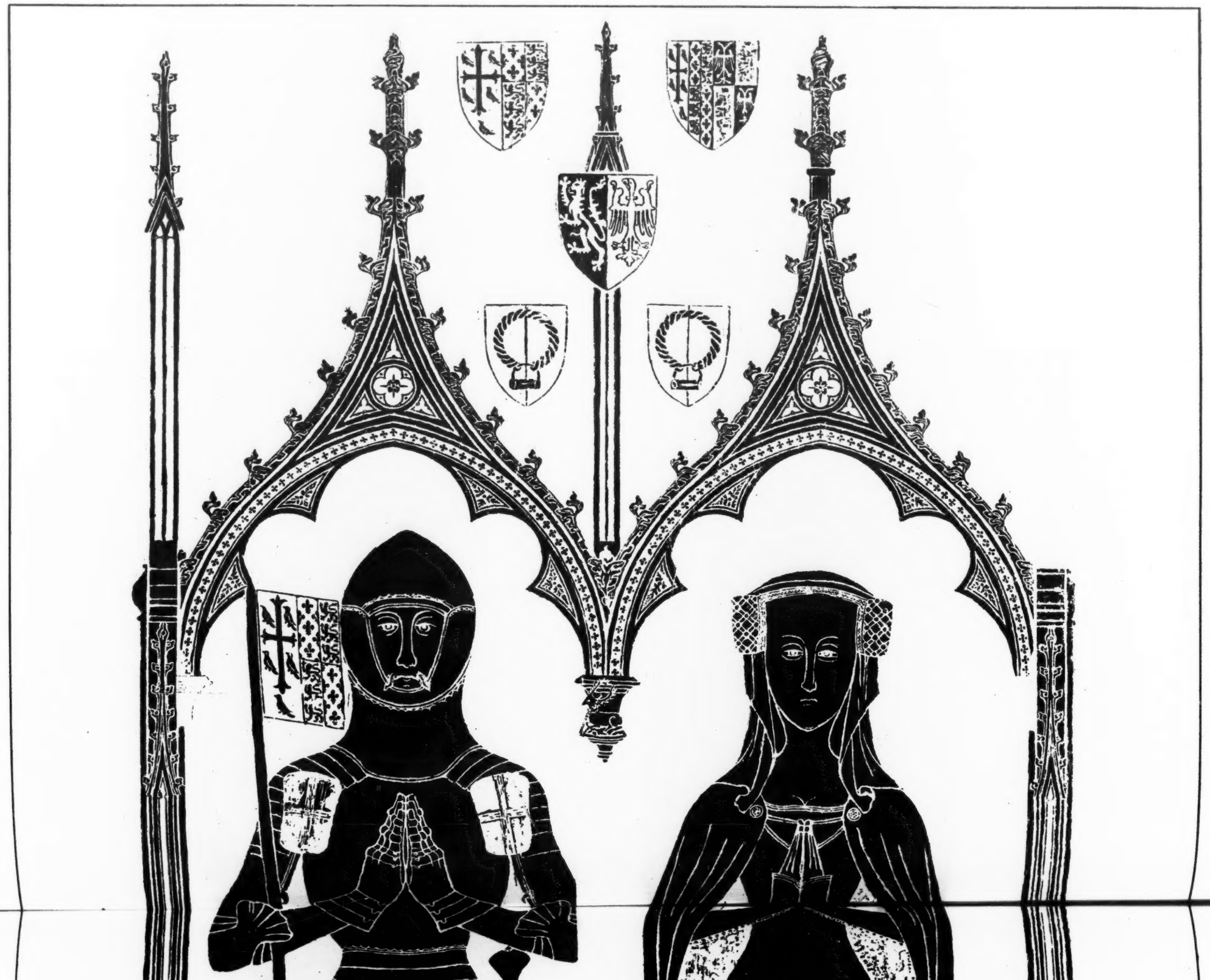
ASSISTANT in Office of Architect and Surveyor WANTED immediately. Must be able to measure and plot small surveys accurately and quickly, and must have good knowledge of construction. Pay at start, 35s. weekly.—Box 263, Office of "The Builder."

ARCHITECT'S JUNIOR ASSISTANT WANTED in provincial office. One accustomed to quantities, specifications, and surveys preferred. State full particulars, terms, etc.—Address L. C. S., at Horncastle's, 61, Cheapside, London.

CLERK of WORKS REQUIRED immediately to superintend the construction of about 10,000 ft. of roads and sewers in London. None except with previous similar London experience need apply. Write, stating experience, age, and salary, and enclose copies of recent testimonials, to SURVEYOR, care of Burbridge & Co., 62, Moorgate-street, E.C.

BUILDER'S CLERK WANTED in a large country Builder's Office near London. Must be well up in accounts, quantities, p.c., and general routine.—Reply, stating salary, age, and experience, to Box 266, Office of "The Builder."

PRIME COST and LEDGER CLERK WANTED. Must have thorough knowledge of keeping builder's books, and capable of taking entire charge of office.—Write, stating age and wages required, to Box 264, Office of "The Builder."



BRASS OF SIR SIMON DE FELBRIGG AND WIFE.—From a Rubbing by Mr. E. Tennyson d'E. Jesse.

CHANCEL SCREEN, BRISTOL CATHEDRAL.—THE LATE

Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

CATHED[illegible]—The late J. L. Pearson, R.A., Architect.

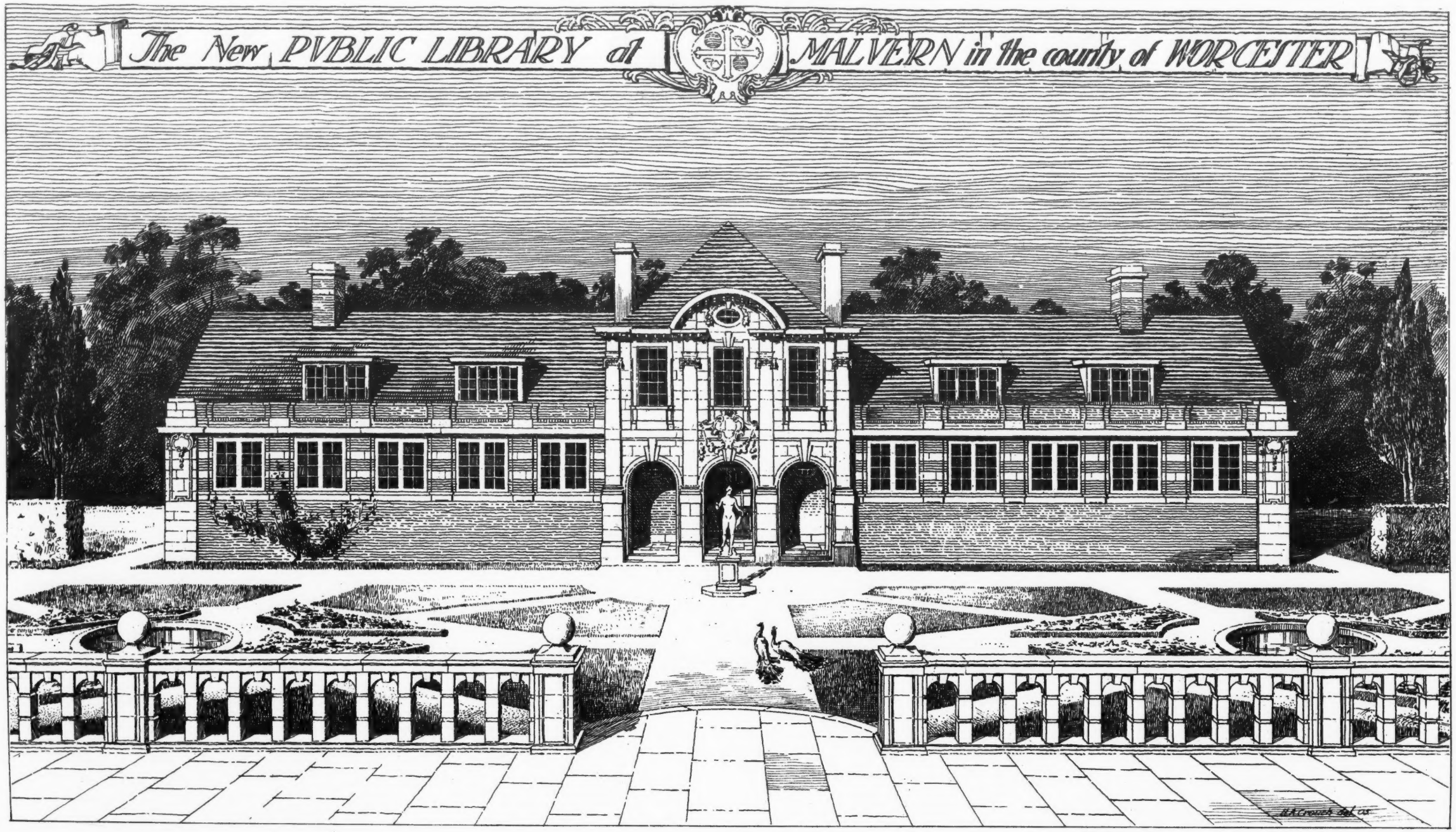
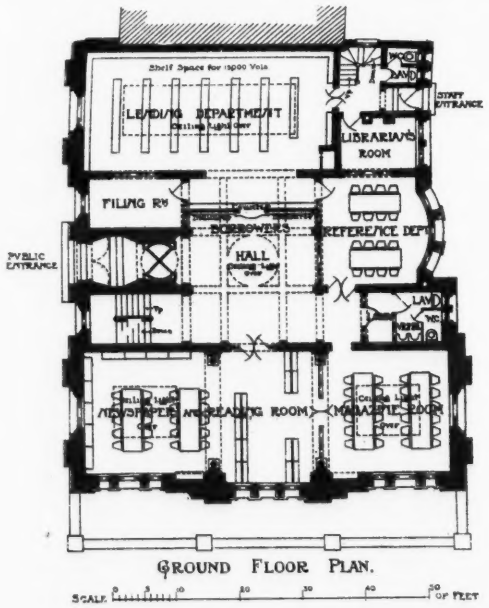


PHOTO-LITHO. SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

THE BUILDER, AUGUST 19, 1905.

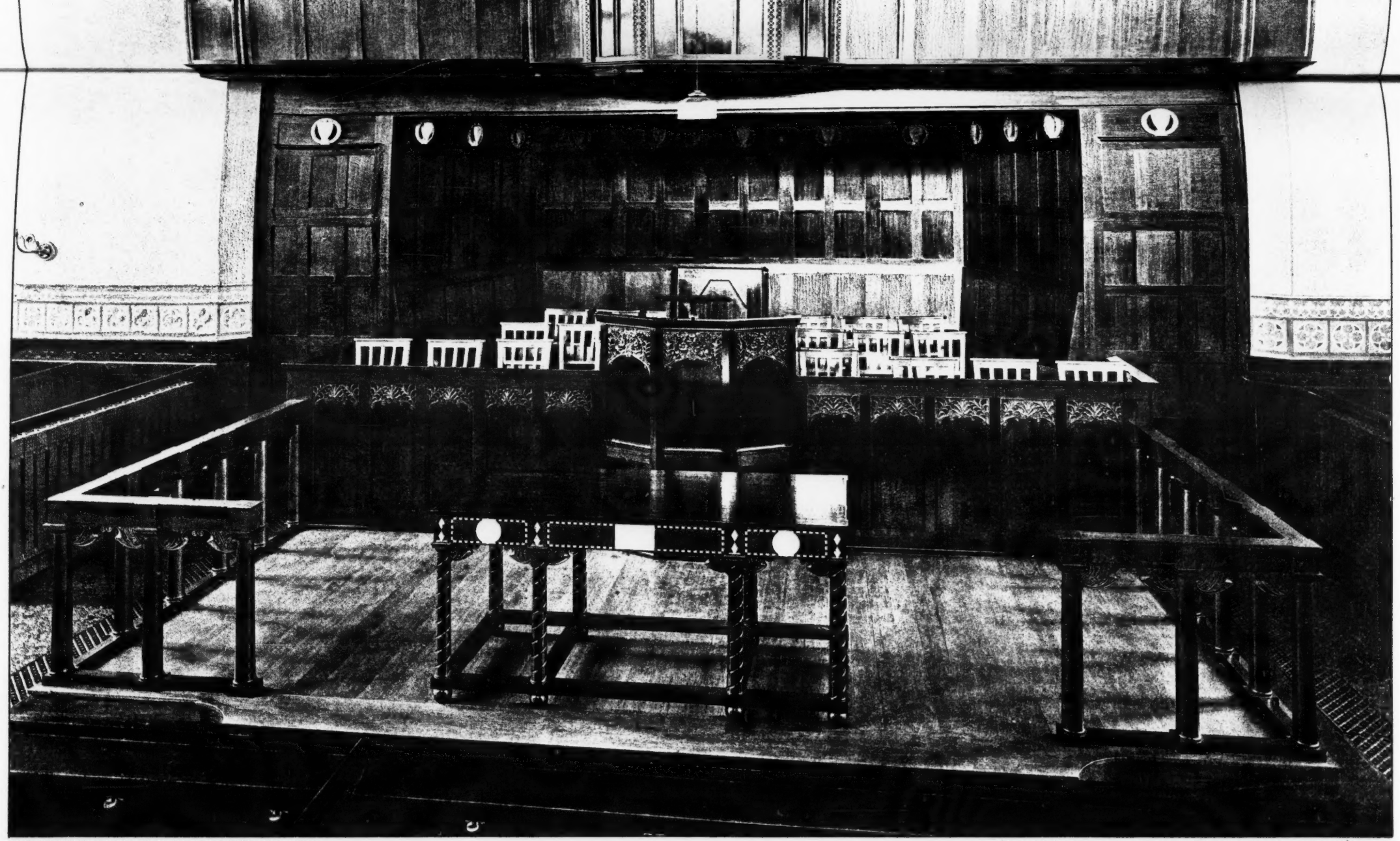
NEW FREE LIBRARY, NELSON.

MESSRS. J. R. POYSER & W. B. SAVIDGE, A.R.I.B.A.,
JOINT ARCHITECTS.



GROUND FLOOR PLAN.

PHOTO-LITHO SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.



PHOTOGRAPHED BY CHAS. R. H. PICKARD, 5 PARK LANE, LEEDS.

"INK-PHOTO" SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

ORGAN CASE AND CHOIR STALLS, HEADINGLEY HILL CHURCH.—The late F. W. Bedford, Architect.